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General Scientific

RECREATION IN RELATION TO PUBLIC HEALTH.

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Carlyle's statement that it were a source of public happiness if all boys between the ages of fourteen and twenty were confined in barrels and fed through the bung-holes, may express a truth, but it is of course equally true such an existence is impossible for the boy. Play is essential in preventing Jack from becoming a dull boy, and Jack's sister requires play quite as much.

Play is essential to growth. It may be physical or mental. The word *recreation* covers both. Recreation to be useful to the individual must be truly re-creative. Nature's great restorers are sleep, food (including lung food or oxygen) and recreation. Sleep restores by resting body tissues, including brain tissues. Food and air restore by adding new factors to build, as in childhood, and to replace waste, as in adult life. Recreation restores by resting some part of body activity, whilst using others. Work is the use of our faculties—physical or mental—beyond the point of self repair—it is the use of a greater or less supply of the surplus stored up during previous sleep and food intake. It generally includes a comparatively long continued use of the same faculties. Its object is the accomplishment of some task.

We are so constituted that we need in our day of twenty-four hours a proper proportion of these elements, intake of energy, sleep and food; output of energy, work, and recreation. We all know that we may now and again make inroads upon work's proportion to the disadvantage of the recuperative elements in any twenty-four hours; but it is true, as some of us realize too late, that the borrowed balance must be repaid by extra time given to sleep, otherwise we will overdraw our account and the failure is recorded in broken down health.

How shall we take recreation? This is a question that no one can settle for another. It varies with age and with the training and above all the taste of the individual. To the child it is mostly physical—the small boy loves a game of tag, the small girl to jump rope; to the young man and woman it is physical and mental—the average boy in his teens adores a game of baseball or tennis, but he begins to be interested in class meetings and debates. As her dresses reach her ankles, the average healthy girl likes a game of tennis and the recently introduced folk dancing is enthusiastically received by her—or perhaps she dotes on the theater or amateur theatricals, while to coil up in an easy chair and read a novel is the height of happiness. To older men and women, the variety in the forms which their recreation may take is increasingly diversified—but they are largely mental. In general, this is as it should be, the recreation which is most beneficial is that which is most pleasurable—that which the individual most desires. We who are teachers and physicians (who in a very real sense are teachers also) must not lose sight of this.

But the physician, the public hygienist and the teacher see so many bodily harms from the lack of physical exercise, in the young as well as in adults, that we are constrained to make a plea for greater attention to the physical side of recreation than is often now given. We do so the more willingly because we believe that the physical side is, or may be made, more pleasurable—more truly recreative—than is now thought by some.

Because the school is in some measure responsible for the *work* side of a child's life, the school is in increasing measure feeling and assuming the responsibillity of the child's recreation. It allows more time, in the day's curriculum, to body exercise, and the departments of physical training are giving an ever increasing proportion of their all too meagre exercise periods to play as distinguished from formal gymnastics. In the older school buildings in crowded sections of the cities, the cement-floored basements are modified as much as possible to meet the needs of exercise. The newer school buildings are making use of the flat roofs for play ground and in some cases additional land is purchased by the city to allow a small yard for play, and thus the valuable out of door element is added.

The effect of all this effort on the part of the school authorities, upon the health of the children is already noticeable. In the opinion of the writer, who sees professionally many children, there are less of blood impoverished, white faced boys and girls and less of those postural deformities which have their greatest demonstration in spinal curvature, than formerly was noticed in large hospital dispensaries. But much more should be done for the school children. The city should purchase, for every new school site, at least half, and better yet an entire city block; and should even to-day buy, although at perhaps considerable expense, a number of the lots and buildings which now surround the schools in the crowded sections, tear down houses and level off for the playgrounds and to insure better ventilation for the school building. Also, the

boards of education should so modify their courses of study, that no child, below grammar school grade, should have school work after twelve o'clock, or at most one o'clock daily. The grammar school grades should finish at two o'clock, to allow the extra hour of daylight in the open air for the children.

The athletic leagues for boys and girls are doing much for the high school grades. The increasing use of the public parks for their sports is a good sign. One notes with pleasure the gradual elimination of the "Keep off the Grass" boards in the parks. The grass was made for the people.

Exercise for girls of high school age is a difficult problem. But the "call to the open" is being heard and met here also. The writer has had occasion to note the enthusiastic enjoyment of Erasmus Hall girls, playing field hockey in Prospect Park, and wishes here to pay tribute also to the formation, by the deputy supervisor of physical training for Brooklyn, of Saturday afternoon walking clubs for high school girls. There are many places of interest within thirty to forty minute five cent car ride, which may afford a real object of interest for these walks.

The city authorities, outside the school boards, are also feeling the responsibility for the physical welfare of the children. Besides the parks, which are being opened less restrictively to the children, the specially equipped and ably supervised public play grounds are becoming a real factor in civic life. Semi public associations are augmenting these play centers in our own city. Their well filled, enthusiastic attendance attests the value of the physical element in recreation and gives great hopes for the health of the men and women of the next generation.

The physician finds himself somewhat in doubt as to whether the parents, especially those who might be called well-to-do, are keeping up with this advance on the part of the public authorities. They are the first to take their anaemic, sickly child to the physician; but are they keen in support of these parks and do they see how they might prevent many of the weaknesses of their children by less attention to the acquirements of the aesthetic arts and more real co-operation to secure playgrounds of their own?

The physician, who perhaps sees the need more than do others, would plead also for recreation and for physical recreation for "grown ups." In the Middle or Monastic Ages of European history, the saving of one's soul was the highest if not the only aim of life; and the degradation of man's physical, if not his mental, faculties a desired procedure. With the advent of the Age of Reason, the pendulum of public sentiment swung the other way, and the intellect was king. To-day, public sentiment and public practice recognize the proper mean, and men and women are seeking the equal development of soul, mind and body. This is as it should be, but many of us still neglect bodily welfare. We are so engrossed with our daily occupations that we leave out the physical side, perhaps even the entire side of recreation.

It is of course a fact that with many, far too many, the actual bite of poverty and the necessity of earning a livelihood preclude time for this. But the writer believes that the time will come, as we already see in a few enlightened and far-seeing establishments, when factory owners, heads of mercantile houses and city fathers will erect places and provide time for amusements for their employes. But are we, who can, taking such time as we might for healthful recreation? Are we men taking advantage of the late afternoon at the Y. M. C. A. or other gymnasiums, where twenty or thirty minutes given to handball, with a plunge in the swimming tank, will change that "all in" feeling to one of vigorous appetite for dinner, preparation for an evening of intellectual amusement and refreshing sleep at night? Are the working women of to-day seeking similar, although not so easily obtained, enjoyable exercise? Are they taking advantage of early evening classes in aesthetic dancing? Are society women forming walking clubs, for a once a week walk of five or ten miles, in the surrounding country? Are working men and women making use of the parks Sunday afternoon, as is done by the people of Continental cities—whole families bringing luncheon or supper to eat out of doors? Are the wealthy using their leisure time—even their out of doors time—for golf, tennis or walking, or are they acquiring the automobile face, the expansive mid girth and the weak foot?

Oh, if we could only learn the simple pleasures of a Saturday afternoon stroll and of an occasional entire Sunday with pocket-carried luncheon, to eat in some quiet spot within twenty miles of the city! New York's suburbs are rich in such places worth while—Forest Park, the centre of Staten Island, the Palisades. I maintain that possible encroachment on some of the time given to duty, so spent, reinforces the borrower to such an extent that he may pay it back several fold in better work.

Physical recreation is a powerful preventive of the social evil. The limits of this paper prevent the discussion here of the value of mental recreation to offset the vital strain of work, but it is not to be forgotten.

In conclusion:

1. Play is essential to the growth and development of the individual and to the welfare of the community.

2. City authorities are recognizing and increasingly supplying this need for children. We should lend our influence to this work.

3. Adults pay too little attention to their recreation needs, especially to the physical side. This side should be enjoyable and may be obtained with more thought on our part, so that every period of our life may be made richer and fuller through the joys of recreation.

A WEIGHTED STOMACH TUBE.

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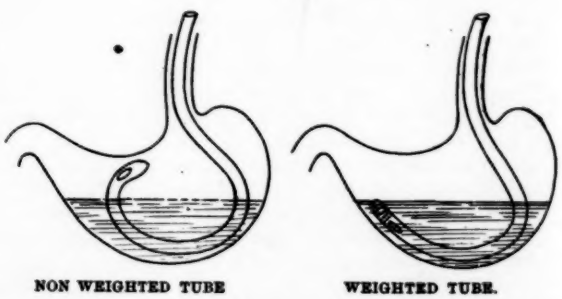
In the removal of stomach contents for diagnostic purposes, the writer has recently used with gratifying results a soft rubber stomach tube the end of which is weighted. An ordinary lead bullet, extracted from a thirty-two caliber pistol cartridge, is placed within the closed end of a number thirty French soft tube. The apex of the bullet fits exactly the concavity at the end, and its base comes to within one or two millimeters of the last hole. In the interests of perfect cleanliness this space should be vulcanized over. The object of the weight is, of course, to keep the tube down into the lower part of the stomach where the contents lie, preventing it from curling up as it is apt to when introduced a little too far. No possible harm can result from the use of the weighted tube in any case where a stomach tube is indicated, either for diagnostic or therapeutic purposes.



NON WEIGHTED TUBE WEIGHTED TUBE.

The use of the device has enabled the writer to extract specimens from stomachs, where, because of the small quantity of contents and the curling up of the ordinary unweighted tube, it has been impossible to do so. The accompanying outline drawings are self explanatory.

DO THE RESULTS OBTAINED FROM VIVISECTION JUSTIFY ITS PRACTICE?*

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In newspapers, magazines and pamphlets of to-day the public is constantly confronted with bold headlines concerning alleged cruelty to animals in the interests of vivisection. It is therefore necessary that every citizen should have a clear understanding of the question and know whether the practice of vivisection is justified by its results.

This question first arose in the nineteenth century, when the public was incensed by the needlessly cruel experiments of investigators in France, Germany and Italy. The agitation spread abroad, and in 1876 resulted, in England, in the appointment of a Royal Commission to investigate the methods of vivisection in that country. In consequence of the inquiries of this commission, a Vivisection Act, regulating the practice of vivisection in England, was passed in 1876. Since that time active propaganda for total suppression has been steadily carried on in the United States and England, but this agitation has not resulted in further legislation regarding vivisection.

One of the probable reasons for many of the discussions concerning this subject is that there exists much confusion concerning the meaning of the term vivisection. As commonly interpreted, it includes only such experimentation as causes pain. In its correct sense, however, vivisection, at the present day, refers to experimentation of any kind, painful or otherwise, upon living creatures, to demonstrate or discover physiological facts or theories. The results of this experimentation which we shall consider will be those which are alleged to have tended to alleviate human suffering.

Our question, as now phrased, is, therefore:—"Do the results which tend to alleviate human suffering justify the practice of any kind of experimentation, painful or otherwise, upon living creatures, to demonstrate facts or theories?

Before we attempt to answer this question, however, it is necessary to determine its exact limits. It cannot be denied that vivisection has sometimes been cruelly and unlawfully employed, especially before the use of anæsthetics was known. Again, we must admit that false anæsthetics (those which take away the power of movement while they do not deaden the sensibilities) should not be used, unless the best results can be obtained in no other way. Moreover, since neither the practice nor observation of vivisection is necessary to the training of students, except such as are studying for the medical profession, the use of vivisection in class rooms should be confined to medical schools. Vivisection upon human beings will be excluded from this argument.

Now that our question is clearly defined and its exact limits determined, we will consider the arguments which are advanced in favor of and against the practice of vivisection. It is maintained that vivisection is not unnecessarily painful, as anæsthetics are used in most cases, or, when not used during the actual operation, the cerebral hemispheres are often removed while the animal is deeply anæsthetized; that animals seriously mutilated are killed if possible before regaining sensibility, and that the capacity for suffering in animals is less than in human beings. Moreover, the costs of vivisection to the students are not great because familiarity with vivisection has no demoralizing effect on experimenters, since they are striving to save rather than to destroy life. The second contention of the affirmative is that investigators are justified in causing the pain necessary for successful results in some experiments, since the lives of many may depend upon the result of one operation and since much greater pain is inflicted every minute to obtain food and to furnish sport. The third contention of the affirmative is that the results of vivisection are of great importance to all living creatures, since conclusions drawn from experimentation on animals may be applied to human beings, and since most of the discoveries which have aided the medical profession, in the last century, to alleviate human suffering, have been due to vivisection.

Those who do not favor vivisection contend, first, that the costs of vivisection are great, in that vivisection is, as a rule, painful, as anæsthetics are not used sufficiently, false anæsthetics are often employed, animals are allowed to die gradually and painfully after operations, and animals are capable of great suffering, even though their capacity for suffering may be slightly less than in human beings. Another reason for their contention that familiarity with vivisection has a demoralizing effect on investigators, is that it lessens their reverence for life. Furthermore, they believe that vivisectors are not justified in causing any pain whatever. They think it is wrong in general to inflict pain, since man should be a friend to helpless creatures, and we have no right to purchase supposed benefit to ourselves at the cost of pain to lower animals. The third contention of the negative is that the results of vivisection are of no benefit to living creatures, for the reason that conclusions drawn from animal experimentation cannot be applied to human beings nor to animals, since the objects of experiment are in an unnatural condition due to exhaustion and nervous strain.

Now that we know the arguments of both sides, we may draw from them three main issues upon which to base our discussion. First, is the cost of vivisection great, that is, is vivisection unnecessarily painful and does familiarity with vivisection have a demoralizing effect on students and investigators? Second, are investigators justified in causing the pain necessary for successful results? Third, are the results of vivisection of signal benefit to living creatures?

The first question is whether vivisection is, as a rule, painful. This is partially answered by Henry Bigelow, in a paper against animal experimentation, for he writes, "Some of the greatest discoveries in medical science were made with no pain whatever." We find it true that the majority of experiments involve almost no pain, since many are in the nature of experiments on the effect of feeding and breeding and others are mere hypodermic injections involving no more pain than is caused by the prick of a needle. In England, in 1907, 96.5% of the experiments upon animals were hypodermic injections. Lord Cromer, reporting for the Royal Commission on Vivisection, said, "The British Royal Commission on Vivisection reports that there was not a single case of extreme and unnecessary cruelty brought forward by the Anti-Vivisection Society which did not hopelessly break down under cross-examination." It is therefore evident that in England, at least, few experiments upon animals are painful. Moreover, J. P. Warbasse in his book on "Animal Experimentation," says, "At present not more than one experiment in 100,000 is actually painful." In this statement, Warbasse includes all countries where vivisection is practised. From these facts, we will draw the conclusion that a very small per cent. of the experiments made on animals are really painful.

Not only is it true that severe pain is rarely inflicted, but it is also true that in most cases where pain is inflicted, anæsthetics are used. This is necessarily so, as it would scarcely be to the advantage of an investigator to work on a struggling animal, especially if the operation were a long and delicate one. There is also danger of injury to the operator if the animal is conscious. In a recent publication by Walter B. Cannon, the chairman of the "Council of Medical Research of the American Medical Association," he presents a set of rules which have been adopted by medical laboratories throughout the United States and which demand that animals be anæsthetized in any painful operation unless the director of the laboratory finds that anæsthetics will defeat the object of the experiment. In

*This paper clearly and comprehensively presents a much mooted subject from the standpoint of an interested and highly educated woman, who views the matter from the lay standpoint. Her conclusions do not differ materially from those reached by that eminent authority, Dr. W. W. Keen, of Philadelphia.

cases where the animal is not completely anæsthetized, an anæsthetic must be used as far as possible and may be discontinued only so long as is absolutely essential for the necessary observations. In England and Scotland, in 1899, no painful experiments were performed without the use of anæsthesia, as is evident from the following statistics: Total number of experiments, 1656. Animals under complete anæsthesia until the time of their death, 1002. Animals under complete anæsthesia during operation, but allowed to recover from its effects, 654. Therefore it is evident that anæsthetics are employed in most cases where pain is involved.

Furthermore, animals seriously mutilated are killed if possible before regaining sensibility. This also is one of the rules adopted by medical laboratories throughout the United States, and it is strictly observed also in England and Scotland; for of the total number of painful experiments (1885), in 1900, 1299 animals were killed before regaining sensibility, and the remaining 586 animals were allowed to live only because it was absolutely necessary for the success of the experiment.

In this discussion of the amount and severity of pain caused animals in the practice of vivisection, it is necessary that we consider their actual capacity for suffering. Can we judge this by our own appreciation of pain? It is evident that we cannot, for pain appreciation is dependent upon mental development, and animals are certainly less highly developed mentally than human beings. G. MacDonald,[1] in an article entitled "Vivisection and Progress," writes, "The capacity for suffering varies so much in different animals that it is quite absurd to compare the sufferings of a guinea pig with those of a man were he placed in similar circumstances." Reflex muscular action is often mistakenly interpreted as a sign of pain. Bishop Laurence[2] writes of an amusing instance of this misinterpretation. When he was a young man he was obliged to undergo a slight surgical operation performed under ether. As soon as he was well under the influence of the anæsthetic he began to struggle and fight. His parents were alarmed, judging his sufferings by his actions. However, when he awoke, the operation successfully over, he found that his fight had been merely an unpleasant dream without pain. So the severity of pain which an animal undergoes in an experiment cannot be judged by any of its movements.

It is asserted by opponents of vivisection that curare, an anæsthetic which, in small doses, paralyzes the muscles but does not deaden the sensibilities, is extremely painful as used by vivisectionists. Professor Büffer says, however, "In such doses as are used in the laboratory, curare paralyzes both the motor nerves and the nerves of sense." Moreover, in England, curare is never used without some other anæsthetic.

Now we may conclude that vivisection is not, as a rule, painful to the animal experimented upon. There is, however, yet another reason why vivisection is of little cost, for familiarity with vivisection has not a demoralizing effect upon the investigators. Does a surgeon become demoralized through his operations on human beings? His aim is the same as that of the investigator who experiments on animals, since they are both working for the physical betterment of all living creatures. They have, therefore, a common and noble ideal, the cure and prevention of suffering. Is this ideal demoralizing? Furthermore, W. W. Keen writes, "I know personally and intimately Horsley, Ferrier, Carrel, Flexner, Cushing and others, and I do not know men who are kinder and more lovable." One of the arguments employed most frequently by anti-vivisectionists is that vivisection lessens the operator's reverence for life, but this argument is weak, as the investigator's aim is to gain knowledge which will benefit humanity rather than merely to destroy animal life.

From these facts and arguments we may conclude that vivisection is not of great cost.

[1]MacDonald, *Vivisection and Progress*, p. 795.
[2]Laurence, *Vivisection*, p. 872.

The next question is:—Are vivisectionists justified in causing the pain necessary for successful results in some experiments? We find two reasons which justify this necessary suffering. First, many lives may depend upon the result of one experiment, as is proved by the results accomplished by two great investigators. Dr. Carrel, by experimenting on two living dogs, devised a life-saving method of the transfusion of blood which has already saved scores of lifes. Dr. Simon Flexner, head of the Rockefeller Institute for Medical Research, of New York, discovered, in experiments on 25 monkeys and 100 guinea pigs, the serum of cerebro-spinal meningitis. The use of this serum has caused the mortality from this disease to drop from 75% to 25%. Similar cases may be found connected with typhoid fever, tuberculosis, etc. We find this sacrifice of the few for the benefit of the many justified, in the second place, by the common consent of society, for society has agreed that when the interests of the few conflict with those of the many, the few must be sacrificed. In all political and business affairs, a majority vote determines the will of the voters. For the same reason, in all civilized countries men go to war to give up their lives for the common good. The opponents of vivisection maintain that it is wrong to inflict any pain under any circumstances, but this statement is hardly forcible, as the pain inflicted in vivisection experiments is often less than that which the animals would have suffered through disease and accidents in their natural surroundings. Anti-vivisectionists also claim that vivisection is wrong, because man should be a friend to helpless creatures. This argument is even less weighty than the one just considered, as man continually and without reproof inflicts upon animals much greater pain, in order to obtain food, clothing and ornaments, than is inflicted by vivisection. Warbasse[3] writes, "Animals are continually slain and dragged away from their young that we may clothe our bodies in skins."

Therefore, since many lives may depend upon the result of one experiment, since society has agreed that the interests of the few must be sacrificed to the interests of the many, since the pain inflicted in vivisection is often less than that which the animals would have suffered in their natural surroundings, and since we find that our opponent's argument that men should be friends to animals is scarcely consistent with the manner in which men's food, clothing and luxuries are obtained, we may decide that investigators are justified in causing the pain necessary in some experiments, for successful results.

Again we quote Walter B. Cannon, who says, "It would be as fair to display a picture of Grenfell fighting his faithful dogs and stabbing them to death, labelled, 'Is this the way to treat your pets?' as it is to represent animal experimentation without its motives and without its triumphs."

Therefore, our final consideration must be of the results of vivisection and their effect on humanity. Are they triumphs? Have they caused any decrease in human mortality? There are many instances which prove that vivisection has caused a large and constant decrease in the death-rate. Aside from the reduction in the mortality of cerebro-spinal meningitis, the use of vaccination reduced the mortality from smallpox, in Sweden, from 2,050 per 1,000,000 persons, annually, in the 28 years before vaccination was used to 150 per 1,000,000 during the 40 years following the discovery of vaccination. The use of the antitoxin of diphtheria reduced the mortality in the hospitals of the Metropolitan Asylum Board, London, from 30.4% in 1890-1893 to 10.2% in 1903. Since the use of antitoxin the mortality in tracheotomy cases has dropped from 66.2% in 1890-1893 to 27.8% in 1908.

Anti-vivisectionists have claimed that the decrease in smallpox mortality was due to better sanitary conditions rather than to vaccination, but this is hardly probable, as the decline in smallpox has been manifest in all countries where vaccination

[3]Warbasse, *Animal Experimentation*, p. 162.

was extensively practised, no matter what the status of sanitation has been. They also assert that conclusions drawn from animal experimentation cannot be applied to human beings. This argument, however, is false, for all animals of the same order are so closely linked by the bonds of kinship that information gained from one is applicable to others. E. L. Trudeau says, "Everything that we know to-day of the etiology of tuberculosis, everything that has a direct bearing on the prevention and control of disease, we owe to animal experimentation." We find, also, that the nature of and treatment by the bacteria causing tuberculosis, typhoid fever, pneumonia, diphtheria, septicemia, dysentery, cholera, leprosy and glanders were discovered by experiments on animals. Darwin, in his evidence before the Royal Commission, made an even broader statement than either of the preceding. He said, "I am fully convinced that physiology can progress only by the aid of experiments on living animals." From this evidence, we may conclude that the results of vivisection have been of great benefit to humanity.

Can anyone doubt that the practice of vivisection is justified by its results? The cost of vivisection is infinitesimal compared with its beneficial results. That cost is justifiable. The weight is all on one side of the scale, therefore, and there can be but one conclusion. The results of vivisection, undoubtedly, justify its practice.

REFERRED PAIN.

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It is a well known fact that diseases or injuries of certain parts are manifested sometimes, at some stage of the ailment, by pains in regions removed from the immediate seat of the lesion. Most of these manifestations of pain are peripheral, or expressions of pain in the continuity of the nerve or group of nerves belonging to the primarily affected area. Hillton, in his book "Rest and Pain," called attention to the value of appreciating this fact in the surgical affections of joints and cavities especially. Nowhere has any one authority grouped the various instances of referred pain, nor in any adequate monograph endeavored to call serious attention to these phenomena, with proper suggestions for their recognition and treatment. This would be a fruitful field for careful investigation and its thorough exploration and cultivation would certainly be of great value to the profession.

Some such thoughts as the foregoing have so often occurred to me that I am induced to call attention to some instances of referred pain, and the importance of knowing of their possible existence, in order to avoid serious mistakes in diagnosis and treatment which a failure to recognize not infrequently leads a practitioner to make.

We may define pain as a manifestation of the irritation of some nerve or groups of nerves of sensation. Other phenomena may also be present as the result of the nervous irritation.

Referred pains may be placed under four categories or groups.

First Group. Cases of manifestation of pain in the peripheral filaments of a nerve when the irritation occurs at the root of the nerve, or in the continuity of the nerve.

This is probably the most common and certainly is the best known and best understood manifestation of referred pain. The history of nearly every case of hipjoint inflammation will include a note of pain in and about the knee of the affected side. So constant and well marked is this pain in the knee that physicians not infrequently mistake the condition for a genuine inflammation of the kneejoint. I have known many instances of mistakes of this kind. Whenever a child is sent to me with a history of restless nights, frequent crying out at nights as if in pain, the development of a slight limp and disinclination to play, a little fever towards evening and *pain in his knee* (usually none complained of in the hipjoint at all), I always think of a coxitis and always examine carefully for local manifestation of the beginning hipjoint disease. If the child is of a tuberculous inheritance or dyscrasia and has had a very slight injury, a fall, a twisting of the leg, or sudden jar by falling, nine times out of ten a coxitis will be found when the above symptoms are present. The explanation of the pain in the knee is that the obturator nerve runs just over the capsule of the hipjoint and sends some filaments to the joint itself, then runs down the thigh and is distributed to the soft tissues about the knee joint. Inflammation of the hipjoint very early causes thickening of the capsule of the joint and, besides the direct irritation of the filaments sent to the joint itself, the main trunk of the obturator nerve may be irritated as it passes over the capsule, and this irritation is expressed by pain at its distribution at the knee joint.

Another very common and important instance of referred peripheral pain is that expressed in the abdominal walls as low down as the anterior superior spine of the ilium from the irritation of a thickened pleura and adhesions, or the pressure of fluid in the thoracic cavity in cases of pleuro-pneumonia, or pleurisy followed by effusion of pus or serum in the thorax. These pains not infrequently lead to a diagnosis of cholecystitis and appendicitis. Recently a case of "appendicitis" was sent to me, which was after examination thought to be cholecystitis by the internes at the hospital, but was found to be a case of hydro-thorax, and the pain in the abdomen was completely cured by aspirating the fluid.

After fractures of the humerus in the upper part of the middle third, if the bones are not accurately set considerable callus will form, the musculo spiral nerve, which closely clings to the bone, will be irritated and sometimes agonizing pain be felt in the outer or radial part of the hand. Cicatricial or bone excrescences about the inner condyle of the humerus are apt to irritate the ulna nerve so that very severe or persistent pain occurs in the inner or ulnar side of the hand, especially in the little finger. I have recently had a very well marked case of this kind produced by a cicatrix just above the elbow joint on the inner side of the arm.

Intercostal neuralgia, as a result of a pleurisy or pleuro-pneumonia, is a well known and very distressing feature of these diseases. The same affection may result from the irritation of a broken rib if the fracture occurs just in front of the angle of the ribs. It may also occur, as I myself can testify from personal experience, as a result of exsection of ribs posteriorly, for empyema. The pain is frequently felt in the upper and lateral aspects of the abdomen also when the irritation is in the thoracic walls.

Second Group or Division. Referred pain expressed in the continuity of a nerve or a set of nerves. The phenomena under this group are not so well known to the general practitioner as they should be. I would like to discuss them with some degree of thoroughness, but the space limit of this paper will not permit me to do this at this time. I can only sketch a few of the very common and important instances.

The first instance I will mention is the radiating pain located about the umbilicus in the early stages of an appendicitis. Bayard Homes, in his work on Abdominal Surgery, illustrates this symptom as a sort of solar radiation; namely, rays of pain radiating from this point, the umbilicus, as a center and reaching out as rays of light do in every direction, but chiefly downward. This "radiant" referred pain lasts usually but a few hours at most, and is succeeded by the characteristic localized pain and tenderness in the right iliac region. Another important condition is the pain in the epigastrium which radiates backwards and is felt especially near the apex of the scapula in the right side; this is characteristic of a cholecystitis. In acute cases vomiting usually accompanies or succeeds it. Common duct gall stones rarely produce this reflex unless the gall bladder is also involved.

A third instance is the iliac and back pains from ovaritis. This is very common and is generally recognized.

Third Group. Expression of pain in communicating or assisting groups of nerves.

One instance of this is the severe earache which is such a frequent accompaniment of an ulcerated condition of the tonsils. This is especially true of specific ulcers of the tonsils, such as syphilitic and carcinomatous ulcers, with very considerable peripheral inflammation. In these cases there is absolutely no sign of ear inflammation and yet most excruciating pain may be present. A severe earache ought always to suggest a careful and thorough examination of the fauces and pharynx.

A second instance of this division of referred pain is the pain so commonly felt about the sacral region and groins as a result of persistent anal fissures. These pains are sometimes also referred persistently to the coccygeal regions and not infrequently lead to resection of the coccyx, because the mistaken diagnosis of coccygodynia is made. The resection of the coccyx *does* reduce the *pain* for the time as it cuts off some of the communicating nerves, but the pain will return. This pain is very trying on the nerves, especially of a woman, and is very apt to bring about a neurasthenic condition. The symptom complex is usually construed to mean uterine or ovarian disease in a woman and not infrequently urethral or prostatic trouble in a man. Many times have I had women sent to me with diagnosis of uterine and ovarian disease who gave histories of persistent and teasing pain in the lower part of the back, usually about the sacrum, who have become confirmed neurasthenics, and who were cured of all their symptoms by the cure of anal fissures or ulcers. Sometimes there are absolutely no recognized symptoms on the part of the patient which would lead her to suppose the anus was at fault. In other instances there are very mild and almost unnoticed symptoms, such as a little burning pain during defecation; occasionally a little blood streaks the feces; there may be some itching about the anus after defecation, and especially at night.

Another phase of these anal ulcers is a very marked anasthenic condition. Very severe pain in defecation, some bleeding, violent itching at the anus, tenesmus, discomfort when sitting, and some relief when walking or standing, etc. The reflex pains however are not at all in proportion to the severity of the local manifestations. The referred pains seem just as bad in the mild cases as in the severe ones. I would advise every practitioner to make a careful digital, and if in doubt, *ocular* examination with the assistance of a speculum of the anus of women who come to him complaining of sacral pains, constipation, slight pain in defecation, occasionally a litttle blood with stools; especially those with neurasthenic manifestations.

Another instance and one scarcely ever mentioned is epigastric pain (gastralgia?) with decided dyspeptic symptoms in cases of carcinoma of the rectum. I have known several instances of this kind. One case was a man of middle age who had been treated a long time by a number of good physicians, some of whom were specialists, for diseases of the stomach. I found a *carcinoma of the rectum.* After I had operated and removed the growth the man had no further stomachic symptoms and was quite well afterwards. (By the way, this operation was done about 20 years ago and I heard recently that the man is still quite well.)

Fourth Group. Vicarious pain, or pain in the healthy organ of a pair which have identical functions and are accustomed to act together in sympathy in their functioning.

The first instance I will mention of this is well known, namely, pain in and about the healthy lung and chest walls in some pneumonias and pleurisies.

A second instance is one *occasionally* met with, namely, a pain in the right ovarian region when the left ovary is diseased. Rarely the reverse occurs.

A third instance is pain in and about an apparently quite healthy and firmly fixed kidney on account of disease or mobility in the other organ. I have had two very remarkable cases of pain referred to the neighborhood of the left kidney which was produced by very mobile conditions (wandering kidney) of the right kidney. The pain in the left was entirely relieved by fixing the right kidney by operation.

I might multiply instances under these few groups but I trust I have sketched a sufficient number to appeal to general practitioners and perhaps to induce them not hastily to conclude that pain in any given region means disease or disorder of that particular region. Some of these conditions of referred pain are exceedingly difficult to construe, and one should feel no sort of shame or vexation when he fails to recognize them. Others are so suggestive and opposite that a discerning and careful physician, having the possibility of their existence in his mind should not fail to recognize them. For this reason especially I venture in this little sketch to call attention to them and urge carefully to investigate conditions of pain.

THE SEGREGATION AND TREATMENT OF THE FEEBLE MINDED.

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In every department of medical science we are confronted with serious intricate pathological problems, both of a general and special character. These can only be solved by an intelligent understanding of their peculiar nature, underlying cause and mode of development, together with the application of wise appropriate means and measures for their relief and prevention.

The study of the pathogenesis and propagation of many such, as well as the recommendation of suitable methods for their amelioration, appeal by their medical character more especially to the votaries of medical science for their just, humane and adequate disposition. Among such problems propounded to the medical profession is that which deals with the appropriate care, management and treatment of the feeble-minded. While strictly technically speaking the feeble-minded belong to that class of degenerates who enter life with a mental disorder or handicap which is not merely potential, but actual, yet all arrests of development are not diseases, but infirmities and are therefore subject to modification and educational treatment. It is therefore of primary importance that we define what is implied in the term feeble-mindedness, for it is so often confounded with other terms such as idiocy, imbecility, dementia præcox and similar states which are grossly misleading. According to the French psychiatrist, De Fursac, two kinds of arrests of development are distinguished. First, a general arrest involving all the psychic functions, which includes three degrees recognized as idiocy, imbecility, and feeble-mindedness. Second, an arrest of development which is almost wholly limited to the moral sphere, constituting moral imbecility or moral insanity.

Dr. Maurice Craig, the noted English psychiatrist, states in his recent work on Psychological Medicine, "that idiocy and imbecility are almost synonymous terms, for they differ only in denoting the degree of mental enfeeblement, while the feebleminded belong to a class by themselves, as the intellectual development of these is on a higher level and they are capable of acquiring knowledge sufficient to be self supporting."

Dr. Wm. A. White, of the Government Insane Hospital, Washington, D. C., sets forth in his "Outlines of Psychiatry" the following definitions: "Idiocy is a condition of profound mental defectiveness, the lower grades being unteachable, while the higher grades may be trained slightly in self-help, viz., to attend the calls of nature and feed and dress themselves. Imbecility is a condition of mental deficiency which can be materially improved by training but not sufficient for the

subject to take a place in the world. Another known form as moral imbecility is a condition of mental defectiveness which is shown in the absence of the higher functions, particularly the moral, capable of training to a considerable degree, but always a menace to society. Feeblemindedness, however, is a condition of slight mental defectiveness capable of much improvement by educational methods. The afflicted individual may ultimately take a place in the world and be self-supporting under favorable circumstances."

A recent article by Dr. Charles B. Davenport in the *Popular Science Monthly* defines feebleminded persons "as those who lack one or more mental traits that are socially important, and that these exist in all degrees, and that, while they may occur isolated, yet it is the multi-defective mental traits which constitute the main problem of the feebleminded, or those who are socially inadequate." Commenting on this article of Davenport the *Journal of the American Medical Association,* in a recent editorial, declares that among the well known defects possessed by many individuals are word blindness, figure blindness, color blindness, number defectiveness, memory defectiveness, moral defectiveness, and that these defects are in general hereditary and the result of corresponding defects in the germ plasm of the parents. If both parents are mental defectives, the combination of the germ cells will almost certainly result in a feebleminded child. Defects in Davenport's belief are not pathological conditions, but are merely deviations from the normal conditions of the adult and from this viewpoint feeblemindedness is simply an uninterrupted transmission from our animal ancestors. It is not reversion, but it is direct inheritance with failure to develop beyond it. Feeblemindedness, according to this author, therefore consists in an aggregation of the defective mental traits, or failure of development of certain socially important qualities which render the individual socially inadequate.

Thus it would appear that a consensus of medical opinion by those competent to judge favors the view that there is an ascending scale of mental growth and retardation beginning at idiocy which represents the lowest type and which is devoid of all attributes which go to form *mind,* thence to imbecility, where we reach the rudimentary intellect although at times wholly devoid of moral sense, while a still higher step bring us to the so-called feebleminded in whose mental organization there are also defects covering at times wide areas, but whose mental capacity to acquire knowledge and to benefit by education is larger than that possessed by either the idiot or the imbecile.

Moreover, the term dementia præcox is so often misapplied that we find it to mean, to many, any morbid mental weakness or enfeeblement which occurs during childhood or the period of adolescence. Its scientific application, however, should be reserved only for those whose mental disorder actually demonstrates progressive dementia. This confusion of terms and their lack of scientific interpretation are undoubtedly responsible for much disorder in classification of the different pathological conditions found in our eleemosynary and penal institutions and more especially is this true when applied to our state homes for the feebleminded.

As an illustration, much as I regret to parade our own shortcomings, the only state provision made for the mentally defective child in Missouri is the Home for the Feebleminded at Marshall. Into this are necessarily dumped the epileptic, the idiot, all grades of imbecility and dementia præcox, besides juvenile incurable insane conditions. Such a mixed environment as this, however classed or modified, cannot fail to prove not only a great hardship, but absolutely harmful, to many children who are justly entitled to better state provision.

Moreover, it practically bars from entrance all those who are found suffering from lesser degrees of mental defects, for it would scarcely be just to place certain of the higher grades of feebleminded children in such an environment, yet at the present time it is the only refuge we have to which to refer such poor unfortunates. It is conservatively estimated that there are at the present time no less than 7,000 feebleminded persons in the State of Missouri and only 400 of these are under state custodial care. In addition to their other mental defects, of the 400 inmates at Marshall, no less than 114 of them suffer from epilepsy, while the rest present the more serious degrees of idiocy, imbecility, and similar mental states. Notwithstanding the fact that there is a large number of feebleminded children waiting for admission, the institution cannot receive them for lack of room. Nor is this unfortunate condition any reflection upon the medical staff or its other officers, for they undoubtedly feel keenly the great omission of the state and do the best they can with what they have, all being handicapped more or less by politics, yet they would willingly change their present deplorable dumping method if possible, as they must realize that it is contrary to all modern medical scientific teaching and treatment.

Those, however, who are inclined to condemn such practice in Missouri and censure its methods would do well before doing so to find out something about their own state and its provision for the feebleminded, for it will be found that in but very few states of the union are conditions any better and in some they are even worse. What is urgently needed, therefore, is not only better provision for the feebleminded, but a more practical scientific classification and treatment of their various mental defects, including wise and judicious means of segregation.

Every physician of experience is familiar with the so-called feebleminded boy or girl brought to his office for advice and treatment. In the crude form they present themselves in two extremes, the idiot or dullard, and the mentally precocious child or prodigy. Between these two widely divergent conditions are children of both sexes, all ages and classes of society, presenting all the varying degrees of feeblemindedness. Some of them are found manifesting their neuro-psychopathic weakness from birth, while others postpone its active manifestation until puberty, adolescence or the educational period, when they begin to lose interest in their studies, their home, parents, friends, besides becoming careless and indifferent toward themselves concerning their appearance, clothing and habits. Moreover, many become morose, sullen, stubborn and indulge in various kinds of dissipation. Others may present an opposite clinical picture in becoming hilarious, talkative, acting foolish, talking loudly without adequate cause, turning against their parents and becoming incorrigible or wayward, with a marked tendency to become vicious and even to commit crime. Hence the former lad of fine promise now becomes a dismal failure, while the precocious girl, once the idol of her parents for her quick intellectual resource, now appears a prattling child and a bitter disappointment.

Such persons are often found in our public schools contaminating the rest of the school children by their lack of attention, psychic insufficiency, moral indifference and uncontrollable impulses, but because of their parents' pride, indifference, financial and social standing, or political pull, the feebleminded child is allowed to stay in school and mix with the other pupils to the detriment of all concerned. Many such are referred to the family physician for relief, but what to do for them at once propounds the most difficult medical, legal and sociological problem of this age, because of the serious lack of state or civic provision, as well as the legal complications involved in enforcing their appropriate custody and control. Many parents refuse absolutely to co-operate with the authorities, hence a large number of such defective children are forced back upon society and allowed to go more or less unrestrained, as well as unprotected.

All medical authorities, however, agree that because of its congenital or inherited defects, the feebleminded child easily

becomes addicted to all kinds of vice, crime and the worse forms of degeneration. Moreover, independent of their purely feebleminded state, many are found suffering from serious anatomical stigmata of degeneration, and somatic and psychic complications like epilepsy, syphilis, paralysis, moral impulsions, besetments, sexual perversions, and all degrees of malnutrition due to defects of development and a lowered resistance of the organism. These inherited defects and deformities also favor the development of misdemeanors and immoral practices, which lead the feebleminded quite often to be referred to the policeman, lawyer and the courts for treatment, rather than to the doctor. And even where there is no criminal involvement the necessity for absolute control in special schools or homes is so apparent that in spite of the legal complications, they are often robbed of the medical care their condition so justly demands. What, therefore, is primarily a medical question often becomes of necessity a purely legal one, so that the care and treatment of the feebleminded are more often penal in character than medically pedagogic, for the jail and the reformatory are necessarily substituted for the feebleminded school. This also explains the origin and purpose of the juvenile court, for the large majority of the youthful offenders are found to be victims of parental neglect, inherited defects and conditions and circumstances which breed, develop, and propagate the morbid condition which institutes feeblemindedness.

To substantiate this claim your attention is directed to a recent report issued by Wentworth E. Griffin, Chief of Police of Kansas City, Mo., in which he claims that last year within six months time no less than 2,480 juveniles were arrested charged with crimes ranging from vagrancy to murder and that the majority of these boys and girls were not normal children, but degenerates who required medical rather than penal treatment. "Boys and girls," says he, "should not receive correction in the city jails, the work house or reformatories. These should be the last resort. To correct a boy you must have an idea of his mental processes. It is natural that the parents understand something of the child and use that knowledge to make a good boy out of him. Certainly it cannot be done in the reformatories, for although the authorities there are competent, they are hardly medical psychologists. In my opinion, if any progress is to be made it is the parent and the doctor that must do the work, not the police and the various courts."

That our Chief of Police deserves credit for not only publishing this report, but also for the advanced position he takes in recognizing the appropriate care and treatment of the juvenile offender, is certain, for he understands the fact that the parents are often the chief culprits in the child's delinquency and that medical rather than penal treatment is more often indicated than is at present allowed or practiced.

When we come to inquire into the cause of feeblemindedness, alcoholic heredity, syphilitic heredity, and consanguineous marriages are found to be the chief etiological factors. Bourneville claims that 48 per cent. of the idiots and imbeciles are the offspring of alcoholic parents, while syphilitic heredity may act in two ways: either in giving rise to a congenital anomaly through intra-uterine disorders, or by causing the appearance of meningeal and cerebral lesions during the first months of life, of which the arrest of development is the consequence. So far as consanguinity is concerned all authorities agree that the marriage of first cousins is attended with a great degree of risk to the offspring, more especially if in both families the stock is markedly degenerate. Acute and chronic diseases in the parents, fright, shock, injuries, parental neglect, faulty education, poverty, malnutrition, social dissipation and lack of proper control are all well known factors in the production of feeblemindedness.

In the diagnosis and treatment of arrests of development the physician is therefore called upon not only to differentiate them from states of acquired mental deterioration, but also to detect high degrees of feeblemindedness approaching the normal, beside determining in a given case the degree of mental defect present and its appropriate treatment. For such purposes a system of tests constituting a measuring scale of intelligence has been recently devised by Binet and Simon.

These tests have been applied to normal children of various ages and have thus been standardized so that it is now possible by means of them to estimate the degree of mental development of any subject in terms of the age at which such development corresponds to the normal average. The authors of these tests have taken special pains to eliminate the disturbing influences of education, having made it their aim to devise a measure of natural mental capacity and not a degree of training. It is said that in practice one finds a good deal of irregularity in the results of the tests, as children frequently respond to some tests of a higher age and fail to do so to some tests of a lower. This led to the adoption by Binet of the following rules: First, the mental development of a subject is rated at the highest age in the tests in which he has succeeded with not more than one exception; and, second, for every five tests passed above the age level as determined by the first rule one year is added. Hence, in interpreting the results of these one must constantly bear in mind the great differences which exist between normal subjects in rate and degree of mental development. A variation of one or even two years from the age level of intelligence as established by these standards is by no means to be regarded as necessarily pathological, but departure of three years or more below these standards is, of course, of great significance from the pathological standpoint.

It is also claimed by these authorities that the average child of three years will repeat a sentence of six syllables but not of ten. At six years all normal children can repeat a sentence of sixteen syllables, while at twelve years a normal child should be able to repeat a sentence of twenty-six syllables. The test is passed only when the sentences are repeated without a single error.

In the United States, where the problem of preventing the immigration of mental defectives is one of great and growing importance, this measuring scale of intelligence should be of great practical service. Moreover as a guide in the medico-pedagogic treatment of the feebleminded, as well as in determining the degree of responsibility in criminal cases, it should be of great value.

In the treatment of the feebleminded all physical defects, reflex irritations and peripheral as well as functional disturbances, should be recognized and receive appropriate treatment. These include a large class of local conditions such as eye, ear, nose, throat and dental defects, as well as complications, such as tuberculosis, rickets, syphilis and general malnutrition, all of which require both medical and surgical special attention. Moreover, in addition, the feebleminded should be segregated and placed in special classes or agricultural colonies and graded as to fitness of capacity to acquire knowledge.

Such segregation of the feebleminded is advocated by medical authority the world over, and when this is done they can be made under appropriate medico-pedagogic treatment to become largely self-supporting citizens.

As an economical as well as a humane measure, the various states can well afford to make such provision, more especially for the large body of feebleminded who are now without any medical care whatever. Moreover, where it is possible laws prohibiting the marriage of such as well as all other defectives should be passed and enforced.

This preventive measure has already been established in a few states with good results, but where this is not possible measures for the prevention of conception by such defectives have been devised and advocated as a means of preventing additions to their ranks. For this purpose sterilization by

vasectomy or salpingectomy, as well as castration, are recommended. In the State of Indiana, for instance, laws have been enacted providing for the sterilization of defectives and criminals and a report of 456 cases of vasectomy performed in compliance with the law at the Indiana Reformatory has been published.

In other states, particularly Illinois, the same measure is advocated, and while we, perhaps, in Missouri are not quite as progressive, yet we believe the time is not far distant when our statesmen and legislators will realize the necessity of doing something more than is now being done toward furnishing appropriate care, management and treatment of the feebleminded, as well as to devise more adequate means and measures for the prevention of the defective, delinquent and dependent classes.

FRENCH MEDICINE.

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I am glad to again present to my American confreres a resume of some of the papers which have recently appeared in *Progres Medical* of Paris.

Under the title of rapid general paralysis, Prof. Lepine, of Lyons, discusses the question of the duration of general paralysis. The opinions of the various authors who have written on this subject are widely different, some of them considering that a year or 18 months is the most common duration of the disease, while others state that death occurs only after five years or more. About one tenth of the cases seen by Prof. Lepine had a very rapid evolution in less than a year. According to his experience these cases may be divided into three main classes: First: "intellectuals," i. e., patients whose brain has had severe and prolonged overwork. Among these persons belonging to liberal professions are very frequently met. Second: patients without overwork, but with irregular hygiene, like railway officials or omnibus drivers. Third: syphilitic patients whose mercurial treatment has not been carefully conducted or supervised. These patients have neglected Prof. Fournier's advice: "Energetic treatment at the beginning, safety treatment in the later stages and rest during the intervals."

To sum up, Prof. Lepine thinks that if the average duration of general paralysis seems to be longer nowadays it is because we are able to make an early diagnosis; conversely there seems to be nowadays an increase in the number of the cases with a rapid evolution.

Hereditary tertiary syphilis of the nose, eye and ear is taken up by Prof. Gaucher of Paris. He has seen a great many cases of these syphilitic lesions in his private as well as his hospital practice, and in this lecture he reports sixteen typical cases, especially nose lesions, which are of great interest. Prof. Gaucher considers only the clinical side of the lesions concerned; he does not advocate any special treatment, since lesions are amenable to the ordinary methods of mercurial treatment.

Prof. A. Cade, of Lyons, discusses the diagnosis of chronic icterus. After a rapid résumé of the varieties of jaundice, the author divides the chronic cases which are the subject of his lecture in two classes: One in which bile is eliminated with the urine, and the other in which urobilin only is found in the urine. Occasionally these two varieties may alternate in the same patient. Prof. Cade reports in great detail a typical case of chronic jaundice with choluria, discoloration of the feces and dilatation of the gall-bladder. He lays great stress upon the necessity of the macroscopical, microscopical and chemical examination of the feces and asserts they offer the best and safest way to settle the diagnosis. The various tests for the various forms of the disease are very clearly explained.

The treatment of the three leading symptoms of ulcer of the stomach is the title of a paper by Prof. M. Lœper of Paris. The three symptoms are hemorrhage, vomiting and pain. The treatment of hemorrhage is the most important part of the treatment of gastric ulcer. The essentials are: complete rest in bed, ice per os or by local application, hot rectal injections and drugs. In subacute hemorrhages perchloride of iron or bismuth salts may be useful; but adrenalin, chloride of calcium and gelatin are certainly better and may be given per os with excellent results in all cases of hemorrhage. Ergotin, ergotinin or adrenalin hydrochloride may be given in hypodermic injections; their action is rapid but temporary and often there is a recurrence of hemorrhage soon after their use. Horse serum or normal saline solution are also useful, the former in hemorrhages of long duration where there are distinct modifications of the blood, the latter in profuse or prolonged hemorrhages to make up for the loss of fluid in the system. Gelatin solution may also be tried hypodermically, but it seems to be less used now than some years ago. The food must be as bland as possible, and Prof. Lœper is distinctly in favor of the old fashioned milk diet for at least four weeks; however, when the hemorrhage cannot be checked rectal feeding must be tried.

Vomiting must be checked by external means and cold applications (ice, ether, methyl chloride, etc.), since the analgesic mixtures taken per os are likely to cause vomiting. Alkaline powders are very often of great value and generally well borne. For hypodermic injections a mixture of atropin and morphia gives excellent results in most cases. Nitrate of silver may also be of use, but it is likely to give an extra stimulus to the mucous membrane of the stomach which is already irritable.

Sabatié, of Paris, gives his conclusions in the treatment of sycosis. The treatment varies according to the stage of the disease when there is production of pus in the hair follicle, or when dermatitis is present. When there is suppuration of the follicle the hair must be cut as short as possible and the skin must be rendered aseptic, either by antiseptic lotions, by steam douches, or by aseptic or weak antiseptic dressings (boiled water, borax, etc.), renewed at least five times during the day. When the inflammation is very deep in the follicle, epilation, galvano-cauterisation or radiotherapy must be resorted to; this must be done once and repeated if necessary three or four weeks later.

When dermatitis is present antiseptic ointment with dermatol, salicylic acid, resorcin or precipitated sulphur are generally successful.

The general treatment must never be neglected and must be directed against local causes (hygiene of the beard, antiseptic lotions or ointments and even epilation of the nares) and against general causes. When suppuration is the main symptom Wright's antistaphylococcic serums may be tried with success.

The method of iodine fumigation in gynecology has been tried with great success by Prof. Reynès, of Marseilles, who gives the modus operandi and the indications of this new and original idea.

This method gives excellent results in all uterine affections which may be treated per vaginam, like ulcerous metritis of the cervix, cervicitis or granular metritis. It is also useful for the disinfection of uterine cancers, after scraping the superficial layers of the tumor. Iodine vapors may also be introduced directly into the uterus, and Prof. Reynès is experimenting with this treatment with success in cases of post abortum metritis.

The modus operandi is very simple: after carefully swabbing the vagina and cervix, Prof. Reynès introduces in the vagina a small pledget of cotton wool dipped in iodoform, which has been passed in the flame of a spirit lamp, candle or match. The combustion of the cotton wool is instantaneous, and the heat of this combustion is sufficient to set iodine free, so that iodine

vapors fill the vagina, which has been previously dilated with a speculum. A deposit of iodine soon takes place in the vagina and on the cervix. Another method consists in heating the tube of an insufflator and projecting iodoform so that free iodine is brought into contact with the diseased part. Neither of these methods requires any special apparatus and may be applied as well in country as in hospital practice.

Prof. Bodin, of Rennes, on prophylaxis against accidents from eating oysters, after examining the various methods which have been advocated for the purification of oysters, recommends the simple and efficient solution devised by M. Fabre-Domergue, Inspector of the Fisheries. Oysters are kept for a week or ten days in tanks filled with filtered sea-water constantly renewed, where they gradually lose all their septic bacteria. Filtered sea-water may be replaced by artificial sea-water, and thus M. Fabre-Domergue's plan may be well carried out in towns far from the sea shore.

In a clinical lecture on paralysis of the larynx, Prof. Déjerine of Paris, whose authority in all neurological matters is universally known, gives a very complete clinical picture of labio-glosso-laryngeal paralysis, with references to typical cases which he has observed in his practice at La Salpétrière.

A very instructive paper on a useful method of palpation by deep inspiration, and by pressure over the upper part of the thorax is given by Prof. Mouriquand, of Lyons. This original method which the Professor has carefully controlled with the X-rays, enables the physician to palpate the spleen, the liver, and even the kidneys, with much more accuracy than the ordinary clinical methods of palpation. In women the downward movement of these organs, during deep inspiration and compression of the thorax, is much more marked than in men, but both in men and women Prof. Mouriquand's method gives useful data which cannot be obtained by the classical methods of palpation.

DEFECTIVE MENTAL EQUILIBRIUM.

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Dr. Carpenter remarks in his Mental Physiology: "The want of conformity between the ideal and the actual is peculiarly apt to arise in the minds of those who live too much in the former and too little in the latter; for as the mind dwells too exclusively upon its own conceptions, and refrains from bringing these into contact with the realities of every day life, so aberrations which would speedily be checked by experience, progressively gain a preponderating influence until at last they may acquire the character of settled delusions, and may altogether upset the balance of the intellect."

Such was the fact in the case of Mrs. W., 35, a charming and intellectual woman, living in a New York suburb. She was a devoted wife and mother, and having considerable leisure, she devoted much time to reading, building up her ideals to suit her own fancies. Her reading was of a desultory nature, without other aim than that of present gratification. The result was a gradual strengthening of her belief in her ideals, rather than in the actualities of life, until a termination was reached in which agoraphobia was most prominent. Whenever out of doors without a companion she was seized with nausea, vomiting, dizziness and faintness. She was thus deprived of the enjoyments of the outer air. When this condition had continued for a year she presented herself to a physician for relief. She had in the meanwhile tried "Christian Science," and studied "new thought" without success; she could not free herself from her ideal of the insignificance of human self in the vast, illimitable universe. To all appearance, her physical health was normal. The organs performed their duties somewhat sluggishly, but the body was well nourished. Her intellect was normal except in one respect; she was able to perceive the actualities of life when presented to her attention, readily acquiescing in the truths of every day life, even to her safety when in open places, but there was an inability to grasp these actualities as real, to the extent of forcing conviction and expressing it in action. Apparently the perceptions were weak, not reaching a conception and compelling a recognition of reality upon the feelings and eventually acting upon volition.

In her case, though no physical abnormality existed, it would be presumptuous to say there was none. Our present instruments could not detect them, but as for every effect there must be a cause, so the inability of the cerebral gray matter to functionate was probably due to some physical defect in composition. Reasoning for conviction was supplemented by the internal administration of phosphates and strychnia.

After three weeks of this treatment her courage began to assert itself in her attempts to go about alone, particularly in open places. Six months later she made a tour of Europe with great satisfaction to herself and family.

A year after this, on presenting herself for inspection, there was no physical and psychical defect discernible; as she stated, life to her was now enjoyable, and she was able, from her past instructions, to see life as it actually existed.

THE GRANGE IS FIGHTING TUBERCULOSIS.

The Grange of the State of New York is actively at work for the purpose of stamping out tuberculosis. It is urging the establishment of county tuberculosis hospitals. A committee recently appointed by the Grange to consider this matter has just made a report, the keynote of which is: "Failure to stamp out this disease, which science tells us can be stamped out, is the grossest public extravagance—an extravagance which goes hand in hand with suffering beyond the power of words to describe."

The first illustration in the report is a group of three photographs. Two of them show the exterior and interior of a hovel in which a man suffering from tuberculosis passed his last days with his eight-year-old daughter as his only attendant. The third picture in the group shows a model dairy, clean, sunny and sanitary. This group is entitled "Uncared-for Human Beings and Cared-for Cattle."

Another picture shows a father and baby on the road to recovery in a county tuberculosis hospital. Still another effective illustration is that of a boy on admission to a county tuberculosis hospital and compares his condition then with his condition eight months later when he was about to be discharged. Pictures of three county tuberculosis hospitals give point to the contention of the Grange committee that county tuberculosis hospitals have passed beyond the experimental stage.

The committee is working in close co-operation with the Committee on the Prevention of Tuberculosis of the State Charities Aid Association. An extensive program now laid out calls for renewed efforts for county tuberculosis hospitals, efforts for a better observance of the law requiring the reporting of tuberculosis cases by physicians and extended activity in the sale of Red Cross seals in 1912. It is suggested that Granges employ visiting nurses for rural districts. It is also urged that the Granges take a more active interest in local public health work and that they try to improve rural public health standards by securing the best possible type of town and village health officers and eliminating political considerations entirely from their appointment and from the enforcement of public health laws. The Grange deserves the enthusiastic co-operation of the medical profession in its laudable efforts to further the interests of health.

Children with defective teeth usually require nine months more study to graduate from public schools than scholars with sound teeth.

Current Orientation

DISEASES OF THE BLOOD.

In *Progressive Medicine*, for June, 1912, Alfred Stengel, of Philadelphia, gives a most thorough digest of the advances lately made in the study and treatment of certain diseases. We take the liberty of culling here and there from Professor Stengel's exhaustive article those points that seem to us to be of peculiar interest and practical value.

Regarding the relative frequency of the various locations of the primary glandular enlargement in Hodgkin's disease, Ziegler states that in a series of 120 cases he found the primary enlargement in 50 per cent. occurred in the glands in front or behind the sterno-cleido-mastoid muscle on one side of the neck; very rarely on both sides simultaneously. In 10 per cent., the axillary glands of one side were the first affected, and, in six per cent., the supraclavicular glands. The mediastinal, inguinal and posterior cervical glands were each the primary site of enlargement in three per cent. of the cases. In nine per cent., the spleen was observed to be enlarged before there was any glandular change appreciable. In 12 per cent. of the cases, no peripheral glandular swellings appeared. Very rarely the retroperitoneal, salivary or lachrymal glands were primarily involved. Ziegler states that this latent stage varies all the way from a few weeks to fifteen years. The second stage, or stage of propagation and generalization, is sometimes brought on by an acute infection, such as influenza, and usually is ushered in by further enlargement of the previously enlarged glands, or by the appearance of new groups.

Ellermann suggests the possible infectious origin of pernicious anemia, since in so many points it resembles myeloid leukemia, for which an infectious origin is now accepted. In their morbid anatomy, remissions, irregular fever and grave prognosis they are strikingly similar. This assumption would explain the latent phases, as in malaria and syphilis. The fact that a number of members of the same family will occasionally develop the disease is suggestive of an infection. So also is the fact that the parasiticide arsenic is the only useful drug. That it sometimes fails to act only goes to prove the soundness of the infectious theory, for such failure is explainable on the ground that the parasites become arsenic proof, as in trypanosomiasis. The virus may be a filterable one, like that of horse and dog anemia and fowl leukemia.

A practical point in the treatment is the exclusion of Bothriocephalus latus, Anchylostoma duodenale and carcinoma as factors. Tieche reports remarkable results from two injections in the patient's back of 10 c.c. of blood, taken from a vein in the elbow of an attendant, the hemoglobin rising in a few days from 12 per cent. to 33, and in six months to 75 per cent. The patient was almost moribund when the first injection was made. Bovaird has had indifferent results from tranfusion in two cases and success in one. Cabot warns against transfusion, but Bovaird thinks that under proper precautions (testing beforehand for hemolytic reaction between the patient's and donor's blood, giving rise to the possibility of severe anaphylactic symptoms; and examination of the blood for malarial parasites) its use is justified with the idea of prolonging the patient's life by favoring remissions. For the pernicious anemia of pregnancy Bauereisen strongly recommends the subcutaneous or intramuscular injection of blood, used promptly after withdrawal from the donor, the spot being gently massaged. The injection should be made daily for a week, five to ten c.c. being the dose. He reports two cures. The effect seems to be the same as when large amounts of defibrinated blood are used. Esch reports a cure in a case in which the disease developed in the second half of pregnancy and took a change for the worse after delivery. He used at the start 35 c.c. of defibrinated blood, giving four injections in two weeks and increasing the dosage to 70 c.c. The hemoglobin in this time increased from 22 to 53 per cent. and at the end of two months was 75 per cent. Muktedir has used glycerin with prompt recovery. The dose is a tablespoonful, increased later to 70 gm. It may cause slight diarrhea. Leede advises against the use of salvarsan in pernicious anemia, except as a matter of differential diagnosis. On the other hand Bramwell reports two typical cases of pernicious anemia in which great improvement followed the use of salvarsan after other preparations of arsenic had failed.

Sternberg recommends treatment of leukemia with the X-rays as the most important therapeutic measure in this disease. In conjunction with rest and hydrotherapy, preferably in an institution, there is subjective amelioration and the small lymphocytes diminish markedly in number. The X-ray is contraindicated if large numbers of myeloblasts appear in the blood. It is also contraindicated if, where arsenic is being used, arsenical herpes, eczema or paralysis have appeared, else gangrene may supervene. Salvarsan appears to have no apparent action in leukemia. Parkes Weber secured improvement in a case by the combined use of atoxyl and radium. Larrabee has obtained improvement in myelogenous leukemia with the mixed toxins of Coley. In the lymphatic type of the disease the results were negative.

Considerable advance has been made in the treatment of the purpuric diseases. Old methods of therapy are being rapidly discarded, such as the use of calcium salts, oil of turpentine and hematinics. They are of doubtful value even in the milder forms of purpura. Instead of drugs, therapeutists are now turning their attention to animal and human sera, and the peptone of Witte. Welch prefers the use of human blood serum and has treated 18 cases of melena neonatorum without a death, but there is a tendency to favor the use of human whole blood in preference to the serum, on the grounds that whole blood is more likely to supply substances which might be lacking, and which are necessary to the coagulation of the blood, and for the reason that it is easy to obtain and can be used immediately. Schloss reports six recoveries out of seven cases. He used from five to ten c.c. of whole blood injected subcutaneously into the loose tissues of the back. Patek reports a case of sporadic hemophilia with recovery treated by an antitoxin horse serum. Moss has had fair success in six cases of bleeding, occurring as complications of other diseases, treated by injections of rabbit and horse sera. In a case of typhoid, but which resembled somewhat purpura hemorrhagica, recovery followed the use of defibrinated blood injected directly into a vein, 262 c.c. being being given in five injections, covering a period of seven days. Moss gave 200 c.c. as the last dose, but it was well borne. Duke considers that the diminished number of blood plates is the cause of the uncontrollable bleeding, and recommends transfusion as the only means of supplying the lack of platelets. Moss says that the most plausible explanation of any good which injections of serum or defibrinated blood may do is that fibrin ferment is thereby introduced into the circulation. It is advisable to use a fresh serum or defibrinated blood, since it is known that fibrin ferment (thrombin) readily passes over into an inactive form (metathrombin) upon standing. It should be human blood, since the red cells from one species cannot functionate in another species, and it is likely that they would be hemolyzed and give rise to toxic symptoms. Lescohier draws the conclusions that the coagulation period in hemophilic patients is greatly shortened by the injection of fresh serum; that the local application of fresh serum in wounds, in patients in whom there is a delayed coagulation of the blood, tends to act as a hemostatic; that the serum of any species is efficient in producing this phenomenon; that the sera of the ox and dog should be avoided, if possible, because of the toxic symptoms frequently attending their use; that regular antitoxic sera,

although possessing some efficiency, are less satisfactory than freshly drawn material. Among continental writers, the administration of gelatin, and more particularly of peptone of Witte, has been earnestly advocated. Nolf lays great emphasis upon the superior hemostatic effect of propeptone compared to fresh serum, which according to Nolf and Herry, in very severe hemophilia has been found inefficient. Nobecourt and Tixier report five cases in which five injections of serum failed to produce any appreciable effect on the hemorrhagic condition, but in which immediate improvement occurred after the subcutaneous administration of propeptone. Nolf warns against the peptones of the manufacturing houses. He uses a peptone rich in propeptone (albumoses), commonly used in laboratory work for culture media. When placed in fresh salt solution the mixture becomes turbid, but clears on boiling, with formation of floccules. It is then filtered hot and sterilized to 120°. This gives a perfectly clear solution. Turbid solutions produce greater local and general reactions. The latter are apt to take the form of fever, headache, vomiting and pain. The dose is ten c.c. of a five per cent. solution, given in the flank, veins being avoided.

Handmann believes that the association of chlorosis and thyroid enlargement in 25 out of 44 cases cannot be a coincidence. In four of the cases the enlargement of the thyroid was progressive, and in three other cases there were symptoms of Graves' disease. The size of the goitre remained the same while recovery under iron was in progress. Seiler has compared the effects of iron and arsenic, separately and in combination, in 33 cases of chlorosis. The use of arsenic alone, in the form of arsenious acid or by subcutaneous injection, seemed to be without any effect. Iron, as a modified Blaud's pill, gave satisfactory results in increasing both the red cells and the hemoglobin. The effect of the combination was so astonishingly good, however, as to warrant the conclusion that iron and arsenic combined is the treatment *par excellence*. Zwetkoff reached the same conclusions as Seiler. Arsenic alone is of no use in chlorosis, and while the use of iron alone is fairly successful, the combination gives a definitely increased improvement. Zwetkoff believes that the increased benefit derived is not only a question of the added action of arsenic to iron, but it is to be explained by the fact that arsenic directly stimulates the bone marrow that is being considerably supplied with iron to increase blood production. He uses arsenious acid in the dose of 0.002 to 0.003 gm. daily.

Watkins finds that the presence of a relative lymphocytosis is a favorable prognostic sign in tuberculosis, confirming the work of Webb and others. Miller and Reed find, in unfavorable cases, a leukocytosis, an increased percentage of neutrophiles, a diminished percentage of small lymphocytes, a diminished percentage of eosinophiles and a marked shifting to the left of Arneth's blood picture; conversely, changes in the opposite direction were favorable. Solis Cohen and Strickler report that improvement is associated with an increase in the proportion of lymphocytes at the expense of the polymorphonuclear cells. The reverse condition obtains as the patient grows worse. The leukocytic picture varies with the resistance of the patient rather than with the extent of the disease. Lewis lays more stress on the condition of the neutrophile in making his prognosis. Under normal conditions the nucleus does not show more than five lobes, but the presence of certain abnormal conditions may increase this to eight or ten. Tuberculosis may prevent it from having more than one, two or three lobes. The neutrophilic blood picture should be considered in conjunction with the differential count. During active malaria Thomson finds the number of leukocytes in the peripheral blood decreased. They are much increased in quiescent or apparently cured malaria. The sporulating of a large number of malarial parasites causes a leukopenia, while a very small number causes a leukocytosis. In perforated gastric ulcer Mannheimer finds the curve of the neutrophile a good index of the resisting power of the patient, although not so regular as in appendicitis. In measles, Hektoen and Eggers find a leukopenia, preceded by a more or less distinct leukocytosis. This leukopenia involves principally the neutrophiles, the lymphocytes being relatively somewhat increased.

Seiler insists that the form of splenic anemia attended with cirrhosis of the liver, enlargement of the spleen and ascites, commonly called Banti's disease, is not a special morbid entity; it is merely a syndrome, due to various known etiological influences. He reports a case in which nature had performed what surgeons strive for in the Talma operation, and yet there was extreme ascites. This would seem to indicate that the Talma operation has no logical basis for the cure of ascites in this condition. Hultgen and Ungar believe Banti's disease to be a clinical entity. In the latter's opinion, syphilis, alcoholism and tuberculosis do not play important parts. He also thinks that splenectomy after the second stage offers no hope of cure.

Hodgson considers the etiology of diabetes mellitus to lie chiefly in the fact that about 90 per cent. of the cases are brought about by errors of metabolism, only a small percentage being due to severe pre-existing pathological conditions. A study of the habits shows that one of the most fertile causes is a long-continued toxemia or auto-intoxication resulting from gross errors in eating. He thinks that such factors as alcoholism, arteriosclerosis, etc., seem to play a minor role in comparison with certain gross errors. He believes that the habit of eating large quantities of carbohydrate in an uncooked or but partially cooked state—batter cakes, corn-bread, graham crackers, etc.—contributes to the increasing number of cases. Kisch calls attention to the intimate relationship which exists between the two metabolic diseases, lipomatosis and diabetes mellitus. He divides obesity into two groups as regards its causation—one "alimentary" resulting from overfeeding with insufficient utilization of food; and, secondly, a "constitutional" type, resulting from inherited tendencies or from general systemic diseases, as alcoholism. About 15 per cent. of the cases of the first type of obesity develop diabetes. S. R. Benedict offers a sugar test for which the solution employed is made up as follows:

Copper sulphate (pure crystallized)..	17.3 gms.
Sodium or potassium citrate.....	173.0 gms.
Sodium carbonate (crystallized).....	200.0 gms.
Distilled water .....ad	1000.0 c.c.

The carbonate and citrate are dissolved in about 700 c.c. of water with the aid of heat and the mixture poured in a large beaker. The copper salt is dissolved in about 100 c.c. of water and poured slowly and with constant stirring into the first solution. The mixture is then cooled and diluted to 1 liter.

This solution may be kept indefinitely in uncolored or cork-stoppered bottles. For use, five c.c. of the reagent is placed in a test-tube and from eight to ten drops (not more) of the urine added. Heat to boiling for two minutes and allow to cool. If glucose is present the entire body of the solution is filled with a precipitate, which may be red, yellow or greenish in tinge. If the amount of glucose is small the precipitate forms only on cooling. If no sugar is present the solution remains clear or shows a faint blue turbidity.

Regarding the surgical aspects of diabetes, Morton favors operation as a general thing, but each case must be considered on its merits. When the area of gangrene is small and not spreading a thorough removal of the slough is indicated rather than an amputation. In spreading gangrene with fever due to septic infection, or where there is great pain, amputation under spinal anesthesia is the best course to pursue. In the treatment of diabetes in general, Foster says that the secret lies in individualization, the adaptation of methods to the peculiarities of each case. There is no diet adapted to all. Most diabetics demand, in a short time, some variation in the monotony of a rigid diet. He considers the oatmeal diet to be by all means the best method of treating acidosis. He is an advocate of five meals a day for the diabetic instead of the

usual three. Magnus-Levy thinks bicarbonate of soda the great drug in the treatment of acidosis. It has no action in diminishing the formation of acids, nor does it favor their combustion, but by neutralizing them it facilitates their elimination and thus withdraws them from the necessity of oxidation. Herzfeld has found sodium perborate to be of marked effect in the local treatment of diabetic gangrene, and cites three cases which showed striking improvement. Forchheimer discusses the general medicinal treatment. He has never found a permanent improvement following drugs. Crude opium is still the only drug that is generally accepted as of service but the objections to its use are many. Hexamethylenamine has given good results, although the manner of its action is only conjectural. Sodium bicarbonate should be begun early in the presence of acidosis, since the occurrence of coma spells death. All drug treatments should be accompanied by diet regulation, of course. Strange to say, Ballint recommends sugar by proctolysis in cases of acidosis. Hodgson has no use whatever for drugs, considering them harmful. He considers the various gluten breads on the market as practically valueless. He shares in the belief that the diabetic is mentally unbalanced on the subject of eating and advises that he be watched as carefully as the morphine fiend undergoing an antinarcotic treatment. "The diabetic should be kept mentally indolent and physically active." The four objective points in treatment are to free the blood and tissues from sugar as nearly as possible, to find and increase the individual patient's tolerance for carbohydrate, to find a diet that will furnish sufficient calories without increasing the sugar intake, and to prevent the usual constipation which accompanies the disease. A mixture of olive oil, castor oil and glycerin, in equal parts, emulsified in a small quantity of gum arabic, is serviceable. In cases of diabetes occurring in children it is essential to place them in charge of some disinterested person.

In the treatment of obesity Reiss recommends abstention from salt in the food in order to favor the water output from the body. Wagner notes that the excessive ingestion of fluids may in itself lead to obesity. He and many others use thyroid treatment in cases of endogenous origin and in those refractory to dietetic management. He continues it for from three to five weeks. The first indication of excess is "tired eyes," followed by weakness, tremor, dizziness, ringing in the ears, dry mouth and, finally, palpitation. He then stops the thyroid for several days. Some cases are completely intolerant. The older the patient the less well borne. Rozenraad considers it contraindicated at the climacteric. Stern cautions against the use of very low caloric diets in the young, never giving less than 30 calories per kilo of body weight per day (14 calories per pound), and instituting no treatment unless the weight is more than 30 per cent. above normal.

The value of the X-rays in the diagnosis of gout is emphasized by Umber, Schmidt and Magnus-Levy. Deposits of urates in the joints show as dark areas in the plates, being less opaque to the rays than are bone salts. Aside from these deposits the gouty joint is typically free from changes. These deposits are most frequent in the first metatarsophalangeal joints and in the phalangeal joints of the fingers. This is a valuable method for distinguishing the gouty joint from the joints of chronic rheumatism or arthritis deformans. A treatment attracting considerable interest to-day is that by radium emanations. His secured marked improvement in 24 out of 28 gouty patients. The clinical improvement was not always associated with a diminution in the uricemia. Gudzent and Lowenthal have noted beneficial influences from this treatment. Schmidt cautions against its use in elderly, severe cases. It is also costly and cannot replace other measures, such as dietary restrictions. Brugsch emphasizes the value of a purin-free diet, but makes the point that it may be necessary to continue it for months in order to get results. Coffee, except the caffein-free coffee now on the market, is probably detrimental. A vegetable diet is not necessarily a purin-free diet. Schmidt and Bessan have shown that spinach, fresh peas, beans, some of the grains, mushrooms and peppers contain amounts of the purins quite comparable to the meats. Taylor has pointed out the same thing. This also holds good for sardines, anchovies, oysters, crabs and lobsters. Brugsch's diet consists of eggs, milk, cheese, butter, cream, bacon, honey, compotes, vegetable soups, potatoes, rice, carrots, cauliflower and bread. Cohn advocates the avoidance of foods rich in sodium, such as foods containing blood, and the utilization of foods rich in potassium, such as potato and rice. His experiments on rabbits have shown that sodium hinders the absorption of subcutaneously injected uric acid, while potassium favors it. Medication with acids or with potassium salts he considers beneficial, since both tend to remove sodium from the body. Schittenhelm believes that alcohol is injurious, particularly so when taken with meals. It appears to retard purin metabolism. Lemonade and carbonated waters are permissible. Falkenstein advocates the administration of a mild iodide preparation for a few weeks each year. He also uses large doses of hydrochloric acid. Schmidt strongly endorses the hydrochloric acid treatment. Foster has shown that piperazin is only a test-tube solvent of uric acid and clinically valueless. The best drugs are colchicum, the salicylates, the iodides and hydrochloric acid. The value of exercise is universally acknowledged. In the attack, Brugsch recommends a mild laxative, such as rhubarb or senna, and a soft diet. He and v. Noorden, Schmidt, Falkenstein, Umber and Cohn advocate strict avoidance of all alkalies, basing their opinion on the experiments of v. Loghem and Pfeiffer.

The choice of a satisfactory name for the disease now known as exophthalmic goitre, Basedow's and Graves' disease must await a more complete and thorough knowledge of the exact nature of the malady; and this, in turn, must be preceded by a better understanding of the physiology of the thyroid than we now possess. The term hyperthyroidism, at one time thought properly to characterize the condition, is coming to be used more for the milder or incomplete forms, and, moreover, is criticised by some investigators on the ground that the disease is not simply the result of an *increased* functioning of the gland, as this term implies. McPhedran states that exophthalmic goitre occurs with only moderate frequency in Canada. During five years only 55 cases were treated at the Toronto General Hospital, being 0.65 per cent. of total admissions. Out of 4,000 cases at the Montreal General Hospital there were 23 cases of exophthalmic goitre, or 0.575 per cent. It is more frequent in the female sex, constituting 80 per cent. of the cases. In men, however, the affection usually has a stormy onset and runs a more serious course. Crile's theory of its etiological origin is interesting and accounts for the parts played by fatigue, worry and fright in the life of civilized man. He states that the primary emotions—fear, anger and sexual love—rest on the same principle, *viz.*, self-preservation and procreation. Under the influence of fear most of the organs of the body are sharply divided into two classes—those that are stimulated and those that are inhibited. The organs and tissues stimulated are precisely those that are actually utilized in the perception of danger and in a physical struggle for self-preservation; while the systems inhibited are those that do not participate in this struggle. There is considerable evidence that the effect of the stimulus of fear upon the body without physical activity is more injurious than the effect of fear with physical activity. Man is capable of only such actions as his ancestors have, through evolution or phylogeny, made possible, and only by association. When, therefore, he receives a stimulus that in his phylogeny would have led to action, but in him no action ensues, though there is a widespread stimulation in preparation for action—this is emotion. Now, whatever the exciting cause of exophthalmic goitre, the

symptoms are alike, and closely resemble the phenomena of one of the great primitive emotions. The thyroid gland is believed to participate in such physical activities. Fear and Graves' disease have the following phenomena in common: increased heart beat, increased respiration, rising temperature, muscular tremors, protruding eyes and loss of weight. Cannon has found an increased amount of adrenalin in the blood in fear, and Fränkel, in Graves' disease, increased blood pressure, muscular weakness, digestive disturbances, impaired nervous control and hypersusceptibility to stimuli. In protracted, intense fear, the brain cells show marked physical changes; in Graves' disease there seems to be a composite picture of an intense expression of the great primitive emotions. The thyroid gland plays a leading role in keeping up this stimulation of the emotions, as evidenced by the effect of diminishing the activity of the gland or of the administration of the extract. Goldflam and Wolfsohn have had some disagreeable experiences with iodine, potassium iodide, iodipin and vioform, a powder containing iodine. These drugs were used internally and locally in the treatment of various conditions and were followed by symptoms of Basedow's disease, which disappeared, however, upon the withdrawal of the iodine, except in one case, which has progressed during the past five years. These cases suggest the necessity for more careful supervision of patients taking iodine, whether there is manifest goitre or not, as even minimal amounts of iodine are likely to induce signs of severe thyroid intoxication. This fact has been known for some time. Individuals with either simple or exophthalmic goitre are apt to react, and in the latter case the condition is greatly aggravated at times. Ebstein emphasizes the very close relationship that exists between the toxic effects upon the thyroid of putrefactive substances from the intestine, due to constipation, and exophthalmic goitre. He has cured and improved a number of cases simply by thorough treatment of the constipation (persevering injections of oil). He is convinced that autointoxication from chronic constipation is a causative factor. With the exception of Williams, most writers regard pregnancy as a potent factor in the etiology. Nicholson attempts to explain the familiar enlargement of the thyroid during pregnancy as an effort on the part of the body to combat the toxemia incidental thereto. There is some relationship between thyroid and ovarian functionings. Hertzler has shown the relationship between pelvic disease and exophthalmic goitre, the latter appearing as a result of the former. The relief of the pelvic lesion is sometimes followed by the amelioration of the thyroid symptoms. Search should always be made in the pelvis for possible sources of irritation in this disease. Bialokur has studied the relationships existing between tuberculosis and Basedow's disease. He has noted the combination in 27 out of 337 tuberculosis patients. Here the Basedow's disease is very likely to be overlooked and the symptoms ascribed to the tuberculous infection. There is probably a vicious circle, the tuberculous toxin exerting an injurious influence on the thyroid, stimulating it to increased secretion; and this secretion may increase the virulence of the tubercle bacilli, which, in turn, may arouse latent processes into active lesions. In his experience every patient with exophthalmic goitre was already tuberculous. If treatment be directed against the exophthalmic syndrome, and is effective, the pulmonary symptoms improve and the patients may even appear clinically cured. Most of his patients were women, were gloomy and despairing, instead of hopeful, as in simple tuberculosis, and subject to diarrhea, sweating and subfebrile temperature. The thyroid was not much enlarged and exophthalmos rare. In such cases either disease may be overlooked. A thyreosis (Krecke's term for the disease) developing about puberty in females, with fatigue, incapacity for work and marked cardiac symptoms, may easily be confused with heart failure. This form illustrates the close dependence between the sexual and thyroid glands. Stern calls attention to the fact that elevation of temperature is one of the early, if not the earliest, objective symptoms of hyperthyroidism. It seems to be more common in the mild than in the more pronounced types of the affection. Starck reports 30 cases of thyrotoxicosis, the mild or abortive type which has come to be more generally recognized in the last few years. Either some of the characteristic symptoms or signs may be wanting, or they may all be present in mild form. The slightest physical or emotional stress may send the pulse rate up by twenty to thirty beats. Insomnia is an early symptom. Depression, impaired memory, irritability and restlessness are usually present. Jermain reports good results in the treatment of hyperthyroidism by Forcheimer's method, *viz.*, the administration of neutral quinine hydrobromide, in five grain doses, with ergotin in all cases in which vascular disturbances were marked, combined, if necessary, with rest and forced feeding. Not all of his cases were typical and of course by far the best results were in the milder cases, yet about half of the severe cases were so improved as to be able to resume their occupations. Salmon reports marked improvement in two cases of exophthalmic goitre in women, aged about forty-five years, to whom he gave systematic hypophysis treatment. The improvement was so marked that he regards this method of treatment as specific—and just as much so as the thyroid treatment in deficient thyroid functioning. The results of treatment with the milk of thyroidectomized goats, the Rõntgen rays, the thyreolytic serum of Rogers and Beebe and the antithyroid serum of Moebius have been very variable. Beck has had 50 per cent. of cures in 1,500 cases from the thyreolytic serum. Ohlemann and Marine and Lenhart have had, paradoxically enough, after what has been said in this review regarding iodine, good results from this drug, but very close observation is necessarily called for. Ohlemann gives 10 to 20 drops, once or twice daily, of a 20 per cent. solution of potassium iodide. Beebe recommends a purified iodothyreoglobulin hypodermically in doses of 1/50 grain. Marine and Lenhart also advise two to five grains daily of commercial thyroid in the so-called secondary exophthalmic goitre cases and in cases with manifestations of developing myxedema. Dayton has had some experience with thyroidectin. He thinks the results far inferior to those secured by rest, symptomatic medical treatment, or partial thyroidectomy. Yet he finds in the literature excellent results reported by some writers. On the other hand general condemnation is meted out by other writers. The patients treated by Dayton with the desiccated milk of thyroidectomized animals showed in the main aggravation of symptoms. One case showed improvement, but he attributes it to restriction of coffee. Edmunds maintains that the effect of this preparation depends in a large measure on the dosage. Where the dried milk is used the dose is usually far too small. One of the preparations of dried milk in common use is so compounded that one ounce corresponds to about four ounces of whole milk. If one dram of this be given three times daily the three drams would correspond to about six drams or one ounce of whole milk, while if the whole milk were prescribed it is usual for the patient to take from one pint to one quart, the total yield of one goat. Marine and Lenhart emphasize the importance of absolute mental and physical rest, a dry, cool, clear atmosphere, plain, well cooked wholesome food, taken at regular intervals, suggestion, digitalis (only for specific heart disease), the bromides (other measures failing), iron, arsenic, sodium phosphate and quinine hydrobromide.

The ophthalmoscope, the sigmoidoscope and, of course, the cystoscope belong to the equipment of every thorough surgeon, and their frequent use is an important part of the diagnostic examination.—(*Am. Jour. Surg.*)

Eye, Ear, Nose and Throat

In culling the good things from many of our exchanges, the subjoined thoughts suggest themselves as worthy of consideration.

Statistics show that of all headaches, 10 per cent. are due to a refractive error or faulty muscle condition of the eyes, and of all frontal headaches, 75 per cent. are due to eye strain. Abnormal conditions in the nose and accessory sinuses contribute very largely as etiological factors in the matter of headache. When any condition exists in this region which inhibits free drainage of the secretions from the frontal, sphenoidal and maxillary sinuses and ethmoidal cells, there is practically always headache resulting.

Gonorrhoeal iritis is very common, is often severe and chronic and is especially prone to immediate and late relapses. Cases may resist the orthodox treatment for weeks.

A fibrous polyp must be distinguished from a myxomatous and a malignant condition. It is a benign growth which seldom recurs after operation and often undergoes spontaneous retrogression. It is found most frequently in the male child at about puberty, and frequently gives rise to recurring hemorrhages and tends to infiltrate the surrounding structures. Views as to their origin are that they arise either in the fibrous aponeurosis covering the basioccipital, or from the choanal region, or possibly, from the maxillary antrum.

Dacryocystitis is, in many cases, merely a symptom of nasal disease. In treating the condition without first relieving the condition in the nose efforts are wasted. Suppuration around the tear sac is largely due to necrosis of the walls of the accessory sinuses. One of the most typical of associated diseases is mucocele of the ethmoid or frontal sinuses, with the resulting swelling to the inner side and above the eye, the latter accordingly being displaced downward and outward.

Mastoiditis is caused by a variety of organisms, notably the staphylococcus, streptococcus, micrococcus catarrhalis, diphtheria bacillus, B. coli communis, pneumobacillus, B. aerogenes capsulatus, Micrococcus tetragenus, sarcina, and B. subtilis.

Between October, 1895, and October, 1909, in St. Bartholomew's Hospital, London, there were 644 cases of intra-cranial infection; of these, 267 were directly traceable to the ear. Of the 267 cases of otogenous intra-cranial infections, in 100 there was leptomeningitis; in 55 lateral sinus thrombosis; in 42 brain abscess; in 34 extra-dural abscess, and the rest presented miscellaneous conditions. Taking the 42 cases of brain abscess, 30 were temporo-sphenoidal and 12 cerebellar.

Lumbar puncture is of value in the treatment of aural vertigo. The best cases are those in which the labyrinthine apparatus is still in a fairly normal state, the most favorable being those of pure labyrinthine origin and of relatively short duration. In cases of this class sensitiveness to the galvanic current may be poor before lumbar puncture, may become more nearly normal after. Prognosis as to results varies much, but it is very good where galvanic and other tests indicate a labyrinthine vertigo with but little nerve degeneration.

Tuberculin treatment should be more employed in laryngeal tuberculosis. When the general condition is bad, and especially when there are high fever and extensive tuberculous changes in the larynx, tuberculin is contraindicated. The dose must be selected so as to avoid general reaction as much as possible. The local reaction with bacillary emulsion is slight—only a serous infiltration with sometimes a thin, cloudy, fibrinous deposit. The treatment produces especially an improvement of the general health and increase of weight and appetite. Healing of the laryngeal lesion is observed only when the ulceration is superficial. When extensive changes are present local surgical treatment of the larynx must be combined with the specific. The infiltrated parts should be removed as extensively as possible with cutting instruments at separate sittings.

The two especial factors in the causation of acute middle ear suppuration are adenoid vegetations and pyogenic micro-organisms. The pyogenic micro-organisms can not always be avoided but adenoid vegetations can. In most cases of acute middle ear suppuration we obtain the history of repeated mild attacks of earache lasting for a few days and then clearing up. These are attacks of acute serous or catarrhal inflammation of the Eustachian tube or middle ear, and speak for the presence of adenoids. All such patients should have their adenoid vegetations removed with the object of preventing acute middle ear suppuration at some future time.

Neuralgia of the mastoid must sometimes be differentiated from an inflammatory mastoiditis. In neuralgic affection there will be pain in the mastoid, and maybe tenderness on pressure. As a rule, the middle ear will be normal, as shown by the hearing and tuning fork tests, and the absence of inflammatory symptoms. The sagging of the posterior superior wall of the inner end of the external auditory canal, which is characteristic of suppurative mastoiditis, is absent in neuralgia. As a reflex cause of pain in this region the teeth should always be suspected and examined. Toxic conditions, such as would arise from a pathological state of the kidneys, or disturbed gastro-intestinal functions, should be sought for, and the possible hysteric origin of the pain should be borne in mind.

Elliott reports a method for improvement of a dense corneal opacity. A woman had treated herself for an inflamed eye with three successive applications of sugar of lead dissolved in rose water. The inflammation subsided, but a dense white plaque remained on the cornea, for which she wanted relief on æsthetic grounds. Elliot scraped the ulcer freely, but without materially affecting the opacity. He then irrigated the eye with a weak aqueous solution of sulphuretted hydrogen, when the white patch at once turned brown. Although the cornea remained just as opaque as before, the opacity was now no longer obvious to every beholder, though still quite evident on close examination. The patient was so satisfied with this result that she declined all further treatment and has not since been seen.

Originally lupus was considered a skin tuberculosis and as only secondarily invading the air passages. To-day it is looked upon as a disease of the nasal vestibule, the skin lesions when present being a lymphatic metastasis. Its primary lesion is the mamillary or mound-like infiltration beginning in the vestibule from direct infection, later slowly involving the pituitary membrane over the cartilaginous septum, turbinals and floor of the nose, and finally the entire upper respiratory tract. Tumor growths, ulceration, perforation of the cartilaginous septum, scabby formations, adhesions and resulting atresias occur later. Involvements of the tympanic cavities and lacrimal sacs are frequent. The so-called lupus exedens or vorax is probably a secondary infection, usually staphylococcic, grafted onto a lupus.

Failures in establishing normal breathing through adenoid operations may be made successes, in the great majority of cases, by the intervention of the orthodontist, who by gentle

pressure, moves the maloccluded teeth into normal positions and relations and stimulates bone development, increasing the size of the maxillary bones and the nose cavity. By causing normal development of the maxillary arch, the roof or vault of the mouth, and floor of the nose, a deflected or "S" shaped septum—when hypertrophy, ledges and spurs are not present—if often corrected in younger patients and benefited in the older.

Every ophthalmologist observes in the eyes of patients, who come to him for examination of their refraction, the remains of an old iritis—iriditic adhesions to the posterior capsule of the lens. Some of these patients will disclaim ever having been afflicted with an eye disease. Cross-questioning will reveal the fact that the onset of their visual symptoms followed close upon the heels of a so-called attack of tri-facial neuralgia. This mistake in diagnosis has left in ruins many an eye that might have been preserved intact. It is almost universally known that the presence of an eye blind from an infected wound is a constant menace to the sound eye. The ophthalmologist should warn the patient to be prepared to meet any suspicious symptoms that may arise at any future time.

Four eye diseases are frequently confounded with each other, iritis, conjunctivitis, keratitis and glaucoma. A typical case of any of these should not mislead if one be on the watch for their most pathognomonic symptoms; iritis has a contracted, sluggish pupil and the exhibition of a mydriatic may reveal posterior synechiæ, causing it to present an irregular outline; conjunctivitis has a mucous, muco-purulent or purulent secretion; keratitis always presents cloudiness or some interference with the transparency of cornea; glaucoma is distinguished by a dilated, almost immobile pupil and increased tension of the eyeball. A combination of two of these diseases in the same eye, as sometimes happens, complicates the diagnosis.

In relapsing acute inflammation of the auditory meatus painting with a 40 per cent. lactic acid solution gives excellent results.

Infection of the optic tract by a spreading of sphenoidal or posterior ethmoidal sinusitis is due more to continuity and proximity than to any peculiar arrangement of the lymphatic system in this region.

In operating upon very old people the physician follows these rules: A very careful eye examination; a complete physical examination extending over several days, of fairly constant observation; keep the patient upright at all times possible, thus avoiding hypostatic congestion of the lungs; keep unbandaged the eye not operated upon. Follow asepsis very carefully.

THE U. S. P. H. AND M. H. SERVICE.

In the April issue of the MEDICAL TIMES we called particular attention to the splendid work the Public Health and Marine Hospital Service is doing in the cause of preventive medicine. Dr. Anderson of the service supplements our somewhat extended remarks with an article (*J. A. M. A.*, June 8) showing what his fellow officers have done in the study of communicable diseases. Their contributions have been along two main lines; first, research work in the laboratories of the service; and second, the application of new as well as older methods in the control of certain diseases. The two lines, however, at times necessarily merge. The measures instituted during the past summer may be considered under three general heads: 1. Quarantine measures enforced at foreign ports. 2. Quarantine measures enforced during the voyage. 3. Measures enforced at ports of arrival in the United States. The measures adopted in the suppression of bubonic plague in San Francisco have conclusively shown that it is possible to eradicate this disease even when it has obtained a foothold in a large city. The work on typhoid within the last several years, including a prolonged and intensive study of the disease in the District of Columbia, investigations of numerous outbreaks in towns and cities, and studies of rural typhoid in different sections of the country, has contributed materially to the knowledge of the epidemiology of the disease. In the past year studies were made on measles, as a result of which we obtained our first definite knowledge as to the susceptibility of the monkey to infection with measles. It was shown that the virus of the disease is present in the blood at least some hours before the eruption appears and for about thirty-six hours after. The behavior of the virus to various physical and other influences was tested. Experiments made to determine whether the scales were infectious, justified the opinion that the desquamating epidermis in measles did not of itself carry the virus of the disease. It was conclusively demonstrated that the infective agent of measles was contained in the nasal and buccal secretions during at least the first forty-eight hours of the eruptive period; and in no instance were the secretions, collected at a later period, found to be infective. Other contributions pertained to the standardization of drugs, especially digitalis, ergot and thyroid preparations; the study of embalming fluids and methods of preparing dead bodies for interstate shipment; the disposal of sewage; laboratory and field studies on hookworm and other intestinal infections, etc.

Dr. Anderson merely emphasizes our previous remarks and demonstrates the exceeding value the Public Health Service is to medicine. The pity is that Congress cannot appreciate, as does the medical profession, the magnificent work Surgeon General Blue and his associates are doing for humanity.

Freud's Psychoanalysis.

Eugene D. Bondurant, of Mobile, Alabama, expresses the following opinion of Freud's method of psychoanalysis and treatment, in the course of an article in the *Medical Record* of March 9, 1912.

When broadly viewed and when divested of its non-essential dress it is found to be a method of highly specialized psychological suggestion, employing the ages old and perfectly familiar methods of the Catholic confessional, the therapeutic value of which Breuer and others unconsciously stumbled upon by way of the careful clinical history insisted upon by the neurologist, the internist, and the Du Bois psychotherapist. The procedure is too highly psychological to be widely applicable, too time-consuming, necessitates an objectionably intimate and confidential relation between physician and patient, and withal is a complicated, cumbersome and roundabout way of accomplishing what other methods, including those of the quacks and the pseudoscientific religionists, bring about by simpler and more direct means. The one reason for its existence is found in the fact that to the overdeveloped, overeducated sexual perverts and hysterics of the dilettante and professional classes the simpler forms of psychotherapy do not always appeal. Freud's psychoanalytic procedure offers them something in the way of psychic sexual stimulation and gratification of morbid egoism and in keeping with their intellectual development. Among the reported favorable results the preponderance seems to be among sexually starved old maid teachers. While some very distinguished members of the profession in this country have announced themselves as disciples of Freud and employ his method in practice, it is my belief that while Freud and his group have made a notable contribution to morbid psychology, and to the science of psychotherapy, and have unquestionably effected numerous cures, the method of treatment will not gain many adherents among the medical men who use the English tongue.

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SEGREGATION AND STERILIZATION OF UNFIT.

The cause of eugenics received an added impetus at the recent meeting of the American Medico-Psychological Association and the joint meeting of the National Associations for the Study of the Feeble Minded and for the Study of Epilepsy.

The presidential address at the first meeting dwelt particularly upon the necessity and value of applied eugenics. As a prophylactic measure it recommended the prevention of procreation by the segregation and sterilization of the mentally unfit.

Dr. James V. May, president of the New York State Hospital Commission, said that a great opportunity for the application of the principles of eugenics would be afforded in a more careful selection of immigrants and the association presented a memorial to Congress, asking that all immigrants be given a thorough mental examination before admission to the country.

Thinking people will give approval to such action. We welcome the right kind of people from across the seas, but criminals and defectives of all classes should be rigorously excluded.

Segregation of feeble minded and epileptics and sterilization in suitable cases were subjects of uppermost importance at the joint meeting at Vineland, N. J. The reports on mental improvement of the feeble minded, after careful instruction and observation for a period of time, were somewhat discouraging, but the fact was clearly demonstrated that the systematic teaching of these children is assisting them to be more helpful to themselves.

We urge upon our readers a searching investigation into the merits of the sterilization of the unfit that they may see for themselves the value of preventing procreation among defectives. If proper legislation could be enacted in every State a few generations would see a startling diminution among the number of inmates of our special institutions. Lives are made miserable and taxpayers are doubly burdened by permitting the unfit to propagate their kind.

The public looks to the medical profession for guidance in these matters and it is our duty to blaze the trail which leads to a better and healthier manhood and womanhood.

THE SUICIDAL MENACE.

Progress in all things is the tendency of the age. Unfortunately some of the tragedies of life are keeping pace with the growing number of good things. The suicide rate is higher than ever and figures compiled by Frederick L. Hoffman, of Newark, N. J., the life insurance statistician, show that in 100 of the smaller cities of the United States the rate of suicides in 1911 had increased to 19.8 per 100,000. Twenty years ago the rate in these cities was 12.8 per 100,000. Mr. Hoffman's statistics go to show that there were about 15,000 cases of self-murder in this country in 1911. Three men destroyed themselves to one woman. The reasons attributed to suicide are mental aberration, nervous diseases, alcoholism, sorrow and distress in the order named.

Undoubtedly the spirit of economic unrest pervading the country plays its part as a causative agent. Competition in every walk of life is fiercer than ever before and through the inexorable law of the survival of the fittest the weak are ruthlessly shunted aside. Suicide is the refuge of some, crime of others. Thoughtful men in every land are giving consideration to this problem. Socialism is offered by its adherents as a panacea which will cure this disturbing and serious social illness. Various isms are put forward as remedies. The medical profession must discover the cause and prevention of every disease before attempting to study economic problems, but it will not be amiss if its members look more carefully into the question of suicide. It is a distinct menace to society and while men differ as to the ethics of self-murder all admit that the increase in the suicide rate is sufficiently alarming to warrant investigation.

A DEEP SEA HOSPITAL.

No class of men lead a more strenuous life than "the fishers of the sea." Over 6,000 of these hardy mariners pursue their ever-hazardous calling in the ice-strewn, storm-swept waters of the North Atlantic.

The Public Health and Marine Hospital surgeons—those gallant watchdogs of the nation's health, have asked Congress for a vessel which, properly equipped, can be used as a sea-going hospital. The Marine Hospital surgeons have spent two years in studying the requirements for a deep sea hospital and find that for $30,000 they can build a ship which will serve well the most fearless fishermen, who spend most of their cheerless lives in little dories in the following of their calling.

This request upon Congress is so worthy, so modest and so greatly needed that we cannot imagine failure of passage of the bill introduced by Congressman A. P. Gardner, of Massachusetts, in whose district Gloucester, the greatest fishing port of the country, is situated.

Since the days of the fishermen of Galilee deep sea fishing has been regarded as the most dangerous of occupations, and if the nation cannot render the work less hazardous the least it can do is to provide means of succor to those fishermen who are ill or injured.

The Marine Hospital Service is to be commended for its desire to provide these sojourners on the deep with proper medical attention.

SIDEWALK CONSULTATIONS.

Sidewalk medical consultations are the delight of the thrifty citizen and the bane of the physician's existence. Most medical men are often accosted on the streets by people who endeavor to obtain diagnosis and treatment free of charge. It is an evil practice. The physician loses his properly earned fee and the money-saving patient loses respect for the practitioner and his skill.

On the other hand, it is often difficult to know how to handle these cases with sufficient diplomacy to prevent ill-feeling on the part of the patient. Some men abruptly decline to discuss professional matters on the street. Others suggest that the person call at the office during office hours.

It has been left to Dr. D. B. Jackson, of Greer, S. C., to adopt a novel method of presenting his platform to his clientele. He approaches the sidewalk consultation subtly by having printed upon his letter head the following:

NOTE.—On account of the vast amount of time required to attend to office and call visit patients, and the interference caused thereby in rendering prompt service to patients whom it is necessary to visit, I have advanced my charges for that class of service. It is only right if one employs a physician's time, and means to pay for it, no matter how slight the ailment treated, nor where the work is done. I do not sell drugs in any sense, nor supply medicines apart from professional work; which includes examination and consideration of the patient, and furnishing and dispensing the medicines. Office closed on Sunday.

Some modification of this idea may appeal to other physicians as a means of solving a delicate problem.

THE SECRET OF OLD AGE.

Interest attaches to the declaration of Prof. Metchnikoff, of Paris, that the indols and phenols in the large intestine are responsible for the decay of the human system known as old age. He claims that they can only be destroyed by sugar or by his recently discovered sugar-producing bacilli, which he has called "glycobacteria," now only found in the colon of the dog.

In addition to the ingestion of these bacilli, artificially produced, Metchnikoff thinks that a vegetable diet, including particularly beets, carrots and dates, is of assistance in furnishing the system some of the sugar it needs, although he admits that sugar as such is not found in the colon.

In Metchnikoff's opinion, if sufficient glycobacteria can be liberated in a man's intestinal tract his life can be greatly prolonged.

As is usual when any scientist lays claim to a new discovery, this modern Ponce de Leon is ridiculed by some of his French confreres, and the assertion is freely made that indols and phenols play no causative part in senile decay.

Metchnikoff's standing as a scientific investigator will, however, assure him a respectful hearing and all mankind will join in the hope that his theoretical findings may develop into actual facts.

Pelvic Congestion.

Herzen recommends for this condition from 40 to 60 drops, 3 or 4 times a day, of this mixture:

Fluid Ext. Hydrastis Canad.
Fluid Ext. Gossypium Herb. .....aa 10 grammes.
Tinct. Hamamelis Virginica..... 20 grammes.

In peritoneal effusions of moderate or small quantity there is always fullness of the flanks, the degree of fullness depending upon the quantity of the fluid and also on the relaxation and thinness of the abdominal wall. If much relaxed, there is more or less flattening of the abdomen anteriorly.

Medical Editorial Table

An Important Chapter in Oral Sepsis.

An absolutely clean tooth never decays. Dentists are a unit in the belief that this is a fixed law. Miller has shown that the primary decalcification of the tooth-structure depends upon certain acids, especially lactic acid, which in turn results from the action of the omnipresent oral bacteria on food particles, principally carbohydrates. These food-stuffs, especially low-grade sugars and starches, readily lodge between and on the surfaces of the teeth, being held there in close contact by means of precipitated mucin. The acids in their nascent state become neutralized by attacking the calcium salts of the tooth-structure and thereby establish a break in the continuity of the enamel, thus furnishing the starting point of the future cavity. With the wide dissemination of this knowledge the cry for alkalinity of the mouth became the watchword of the dental and medical professions. Alkaline saliva and alkaline washes were the shibboleth of those interested in oral hygiene. Illogical deductions are based on erroneous conceptions of the physiology and bacteriology of the mouth. The temporary alkalinity of the mouth does not alter the reaction of the continuously outpouring saliva. The average mixed saliva is a suitable medium for germ growth. To check the virulence of the acid-producing germs in the mouth—the real factors in dental caries—with alkaline washes, is, for teleological reasons, a contradiction in itself. It is not the temporary neutralization of these acids which we seek when combating dental caries, but the inhibition and, if possible, the destruction of the acid-producing organisms. Pickerill claims that he has been actually successful in preventing the further progress of decay and completely checking the process in its very beginning. In order to prevent the retention of fermentable carbohydrates on and between the teeth and so eliminate or very considerably reduce the carbohydrate factor in the production of caries, starches and sugars should on no account be eaten alone, but should in all cases either be combined with a substance having a distinctly acid taste or should be followed by such substances as have been shown to have an alkaline potential; and the best of these undoubtedly are the natural organic acids found in fruits and vegetables. We have placed too much stress on so-called antiseptic tooth-powders and ill-constructed mouth washes. They may have assisted in mouth cleanliness but they have not been preventives of caries. Pickerill has arrested caries even when the tooth-brush has been used only spasmodically. Green stains in children have disappeared under no treatment other than that outlined.—*Interstate Medical Journal*, July, 1912.)

Tuberculosis Sanatoria.

Sanatoria for the tuberculous have now for more than a score of years past—indeed we may say for a generation—been building in this country, as elsewhere. Many have doubted the utility of these institutions. The recent report of the committee appointed by the English Chancellor of the Exchequer is emphatically favorable to the sanatorium system of treatment. The sanatorium, besides the cure which it effects, has educational and disciplinary advantages of inestimable value. The patient may not be able to find place in such an institution for the whole term of his cure. (It is probable that all the institutions now existing in civilization could accommodate no more than 10 per cent. of the tuberculous). Such a one is educated and disciplined in the prophylaxis and cure of his disease. What this means, every physician who has tried to make such patients (especially young men and young women) conform to his directions during "home treatment" will appreciate. In the sanatorium the patient gets the prophylaxis habit; and the following out of the cure becomes routine with him. At the end of three months, then, he has the knowledge

and the necessities of his situation fairly well impressed upon him; and he may thereafter achieve his own cure outside the institution. As to hospitals for the tuberculous, meaning institutions for the unfortunate consumptives whose recovery is not expected, they are more essential than sanatoria, from the communal standpoint, because the advanced consumptive oftentimes so pathetically helpless that he is unable to dispose properly of the billions of bacilli he daily emits, is a source of grave danger to his family and to his community.—(*Boston Med. and Surg. J.*, June 6, 1912.)

Vital Resistance of Patients.

In spite of the general progress in surgery during the last two decades many surgeons still look upon the surgical condition they are called upon to treat as something quite apart from the individual to be treated. The appendix is studied, but the heart and lungs are not looked over before advising immediate operation. Others are always ready to urge operation for a simple inguinal hernia, for a varicocele, for a chronic gastric ulcer, without considering whether the operation may not be a much graver source of danger than the morbid condition itself. But healthful signs are appearing of a tendency to study the patient as well as his disease, to consider the factors of safety present in the individual under consideration, and to take all possible means of increasing the chance of recovery from the operation itself as well as from the disease. Bloodgood has been especially emphatic in respect to the necessity of estimating the vital resistance of each patient, with the exception, of course, of those in whom no choice can be made because of the urgency of symptoms. He thinks that in the pre-operative interval physical rest must be obtained, the function of the kidneys ascertained, blood pressure recorded, and food and stimulants modified in kind and quantity to suit the individual's needs. Of equal importance are mental tranquility, fresh air, moderate catharsis, increased water, and the restriction of tobacco, such measures tending to conserve or increase the vital resistance. The anesthetist must be a physician, and, if choice must be made among the members of the house staff, a senior should be chosen. Nitrous oxide and oxygen anesthesia is the best for all purposes, while the additional use of a local anesthetic to "block" the nerves adds a great deal to the prevention of postoperative shock. Blood pressure estimations during the operation tell the condition of the patient and approach of danger better and earlier than the pulse and respiration, and a rapid and marked drop in pressure is to Bloodgood a sign that saline infusion is immediately needed. Postoperatively, Bloodgood uses the Murphy salt solution continuous method, so that the kidney functions may be started early. Morphine in small doses is given to allay restlessness and pain. Complications are carefully looked out for, such as dilatation of the stomach, excessive distension of the abdomen, acidosis, etc. Recovery from the operation and the condition operated for should be followed by watching the patient for the development of any nervous complications, and in this the family physician and the surgeon should co-operate. —(*Medical Record*, June 1, 1912.)

Gaucher versus Salvarsan.

Gaucher, of Paris, has brought a severe indictment against salvarsan. He claims that Finger, of Vienna, corroborates him in many particulars. He denies any sterilizing action to salvarsan and credits it with a merely cicatrizing effect on dermal lesions, which is rather dangerous than otherwise in misleading both physician and patient, and avers that it renders syphilis latent, to break forth with renewed fierceness after months of quiet. His attack is so very severe and unjudicial that it will be discounted by experienced therapeutists.—(*New York Medical Journal*, June 8, 1912.)

It must be remembered that salvarsan was discovered by a German—Ehrlich—and Gaucher has never been known as a lover of the Teutons. He was also a warm partisan of hectine, a French arsenical preparation for the treatment of lues, which proved a failure. These facts, combined with Gaucher's well-known temperamental vagaries, give a basis for his attack.

The Bacterial Contamination of Bread.

Katharine Howell has made a timely contribution on the bacterial contamination of bread. She shows that under some conditions the bacterial smearing of loaves of bread may be very considerable, reaching, in the case of unwrapped loaves kept under uncleanly conditions, hundreds of thousands of germs. Out of a hundred loaves purchased from as many different shops in the city of Chicago, 14 per cent. were each coated with more than ten thousand bacteria. As might be expected, loaves obtained from clean shops have fewer germs on them than loaves kept under dirty conditions. The difference between the wrapped and unwrapped bread is particularly suggestive. In no case did the bacterial contamination of wrapped bread reach a high figure. There were less than a thousand bacteria on 85 per cent. of the wrapped loaves. More than half of the unwrapped loaves (62 per cent.) were coated heavily. Eleven wrapped loaves bore on the average only 371 bacteria each. Seventeen out of eighty unwrapped loaves yielded gas-producing bacilli, typical *B. coli* being present in three cases, while in twenty wrapped samples no gas-producing organisms were found. Lumsden has traced cases of typhoid fever to the handling of bread by one caring for a typhoid patient who was also serving as an attendant in an institution. Hinton reports seven cases of typhoid fever emanating from a bread slicer in the dining room of an institution, this person being a typhoid carrier of three years' standing. Kayser in his observations on the occupational incidence of typhoid fever in Strasburg found a particularly high typhoid mortality among bakers.—(*J. A. M. A.*, July 6, 1912.)

Surgery

In reviewing the association *Journal* we are impressed with the wealth of surgical material its pages contain. The subject is treated in its broadest and doubtless in its most practical sense. Without attempting to classify the various phases of the branch, we are epitomizing rather generally some of the papers recently published which appear of value to the general practitioner.

Abdominal Pain.

Dr. George G. Ross, of Philadelphia (MEDICAL TIMES, May) presented a thoughtful paper on Surgical Indications of the Right Quadrant of the Upper Abdominal Troubles. His colleague, Dr. Judson Daland, discusses (April 6) the subject of abdominal pain, particularly in the upper abdomen. He says it is usually due to gall-stones or to duodenal or to gastric ulcer. Pain due to uncomplicated gall-stones comes and goes suddenly, without warning, at intervals of hours, days, months or years. Gall-stones may, however, exist in the gall-bladder without symptoms. The pain and its duration and intensity depend on the size of the calculus and its position and the amount of obstruction that it can produce. Slight attacks may occur from swelling of the ducts, mucous masses or overdistension. A friction fremitus heard over the gall-bladder containing gall-stones has been described. In suppurative cholangeitis, diffused dull pain in the hepatic region with local tenderness and daily intermittent fever, simulating malaria, may occur. Adhesions may be produced causing obstruction and pain from that cause also. The pain of biliary colic may be simulated by hyperchlorhydria or hyperacidity, or both. Chronic ulcer of the stomach causes burning, boring or gnawing pains, relieved by food and drink or alkalies and recurring two to five hours after meals. The

attacks may persist for weeks, followed by intervals lasting for months or years. The location of the pain depends largely on the position of the ulcer, the nearer the fundus it is the lower the pain will be felt, and the later after a meal. Hematemesis and melena are important signs of gastric ulcer, but their absence is not of diagnostic importance. Chronic indurative or indolent gastric ulcer usually occurs in the pyloric region and is marked by the long interval of comparative good health between the attacks which masks diagnosis and leads to a belief in a cure. The ulcer is, however, most dangerous and should receive surgical treatment. Medical treatment is only palliative. The pyloric region is a favorite site of ulcer and cancer. Chronic duodenal ulcer is more common than the gastric form and seems to occur more frequently in males. It has the same difficulties of diagnosis and dangers of prognosis as pyloric ulcer and requires the same prompt surgical treatment. Duodenal kinking may cause pain like ulcer and a radiograph will reveal the conditions. Lastly Daland speaks of gastric carcinoma, which in more than half the cases starts on the basis of an ulcer. It may be painless even in advanced cases and its diagnosis may be easy, difficult or impossible. Any unexplainable persistence or recurrence of the familiar syndrome of chronic gastric indigestion, in spite of efficient medical treatment, calls for prompt surgical diagnosis and measures.

Fractures.

The advice of some able surgeons that all fractures of long bones should be operated on is not shared by W. O. Sherman, Pittsburgh (May 25). He says that no fracture should be compounded if it can be properly reduced and kept in reduction. During the past year it has been his routine practice, however, to use the Lane bone plates with screws in all fractures in which he was unable to restore and hold the fragments to their proper relations without it. He prefers to operate after the first week or ten days, as the operation can then be done with more ease and less hemorrhage, etc., than at an earlier stage. He uses the X-ray both for diagnosis and for observing results, but cautions against putting too much confidence in it, as it is often somewhat misleading. He gives the technic of the use of the operation, which is safe and easy in the majority of cases of simple fractures. His conclusions are that the fractures of long bones which cannot be successfully treated by means of splints, extension, etc., should be operated on. There is no evidence to justify the belief that the plates act as foreign bodies causing rarefying osteitis. There would be fewer cases of non-union if the faulty approximation were early enough recognized and corrected, but it is very necessary to have the proper operating equipment and use the most rigid technic. The periosteum should be preserved and the tissues handled delicately, but thoroughness must not be sacrificed to speed. The use of the plates obviates the uncertainty of continuous approximation during convalescence caused by restlessness, delirium or accident. In most cases it will be found necessary to remove the screws and plates, as they are sufficiently irritating to give rise to persistent small sinuses. With the advent of the stereoscopic X-ray plates the conditions can be better interpreted. The use of the steel bone plate will have to be in the hands of operators whose experience renders them reasonably safe and certain. The vanadium steel plates are far better than the old high carbon steels, and combine the maximum of strength with the minimum of volume. A self-tapping machine screw should be used instead of the wood screws formerly employed.

Joint Disease Atrophy.

In some cases of injury to large joints complete recovery does not occur as usual in a few weeks, says R. W. Lovett, Boston (May 25). The joint becomes irritable and painful on use, its circulation is impaired and the tone of the muscles about it is reduced. The bone also may be involved in cases of long duration and the X-ray shadow in the spongy portion is not so distinct and may be almost lacking. With every sign of synovitis or arthritis there is muscular atrophy, some of which persists in acute cases and continues as a complicating factor in chronic cases. It is one thing, he says, to treat synovitis in college athletes and another to treat it in men and women with poor muscles or in middle life. He would not abandon fixation in acute cases, but wishes to call attention to the inevitable muscular atrophy in any event and its increase through prolonged fixation. He insists on the importance of attention being paid to the after-treatment and after operations on joints. In regard to bone atrophy, either alone or complicating other conditions, "we should bear it in mind as a competent cause of pain, swelling, stiffness and disability when the X-ray shows marked loss of spongy tissue and clear white lines defining the cortex. As to therapeutics of both conditions, the treatment of the cases described has indicated the measures, in my opinion, most likely to be of use. Rough or excessive massage invariably aggravates symptoms and overuse causes symptoms so severe that one is tempted to abandon treatment. Massage, heat, passive congestion and active exercises in the smallest possible doses, followed by active progressive use of the joint, are the measures most likely to be of use."

Bone Plating and Bone Clamps.

After analyzing sixty-one cases of bone plating in St. Louis City Hospital, E. A. Babler observes (May 25) that the greatest danger of plating is infection and consequent osteomyelitis, and in all cases of compound fracture of the tibia, fibula, radius, ulna and clavicle the plate should be removed as soon as possible. It should never be placed immediately under the skin. Plating yields the best results in simple fracture of the humerus and femur providing all precautions are taken to prevent infection. A snugly fitting cast should be applied immediately after plating and this done as carefully as the plating itself. Plating is not recommended except in cases in which the skiagraph shows that it is advisable, since it is impossible always to avoid infection. He goes over several of the special conditions in which the method is applicable in particular. In his sixty-one patients with sixty-six platings there were thirty-five plates removed, twenty-six perfect functioning results; one death was due to postoperative pneumonia, one to shock following a second plating and two to sepsis. Plating, he says, yields the best results in cases (a) of non-union; (b) of compound fracture with considerable displacement, and (c) of simple fracture of the humerus and femur, in which the skiagraph indicates the inefficiency of the closed treatment. "Plates should never be placed immediately beneath the skin unless we expect to remove them. I seldom or never plate the clavicle, radius, ulna or fibula, since the absorbable wire is preferable. The character of the fracture and the skiagraph findings indicate the proper treatment in any given case of fracture of the long pipe bones."

With the object in view of creating an instrument that was practical and simple in construction, and one that would not be too much in the way of the surgeon while he was at work, Francis Reder, St. Louis (April 20) has constructed a bone clamp that can be insinuated under fractured bone ends with the least amount of traumatism possible. The clamp is provided with a handle of sufficient strength to permit of a firm grasp, so that, whatever strength may be necessary for its insinuation, it can be exerted in a steady and fixed manner. The clamp apparatus of the instrument is exceedingly simple, with no screws to complicate it. It is of sufficient strength to permit any force that may become necessary to be applied to maintain the fractured ends in apposition. The purpose of this bone clamp is not to force the fractured bone ends into apposition or to maintain them in apposition by force, but to hold the bone ends in apposition after the surgeon has made the proper anatomic correction, and to permit the steel plate to be applied under the best possible advantage. A steel plate, applied while the ends of a fractured bone are being held in "position" by

the force of a clamp could hardly be expected to compete with such a powerful instrument. It is a one-piece instrument and its manipulation, on account of its construction, invites ease without rough handling of the tissues. The supporting prongs are so constructed that they cannot endanger any blood vessels that might lie in the immediate vicinity of the broken bone; the counter-prong, attached to the screw part, will not impinge on any structures excepting those desired. It permits of the ready reception of the steel plate and holds it in place without interfering with the driving of the screws. The cross bar, should it be in the way, can be removed.

Multiple Diverticula of Ileum.

E. E. Walker, Hot Springs, S. Dak. (April 20), reports the case of a girl, aged 11, who was suffering from typhoid. She complained of pain in the appendiceal zone, and within ten hours the pain was so marked as to signify an intense infection and inflammation, having all the appearance of an oncoming rupture. The pulse and temperature rose steadily, the thermometer registering 106°F.; the pulse was 164. Vomiting set in and was profuse. An incision of liberal length was made along the outer border of the rectus muscles. A large amount of straw-colored fluid was released and a portion of the omentum, completely free from any adhesions, presented itself in the opening. The cecum was almost rigid and the appendix not visible. A large semi-solid and irregular-shaped mass was felt about 2 inches from the ileocecal valve; it consisted of the appendix, greatly enlarged and inflamed and firmly adherent to the under surface of the ileum and to one small and one large diverticulum of the ileum. A third diverticulum was in close proximity to the tip of the appendix, but not attached in any manner thereto. The large diverticulum was filled with a fecal mass as large as a man's thumb. The tip of the appendix carried three small concretions. The base of the appendix was slightly gangrenous, the body and tip very much injected and blood-vessels stood out prominently. Appendix was removed and stump crated. The small diverticulum was pursed into the bowel, while the other two pouches were removed, inverted and sutured over as in an enterostomy. All symptoms rapidly subsided after the operation; the wound healed nicely, although the typhoid condition ran its usual course, and the patient finally recovered sufficiently to return to her home.

Sacculated Aneurysm.

Six hitherto unpublished cases of sacculated aortic aneurysm treated by wiring and electrolysis are reported by H. A. Hare, Philadelphia (April 13). He has performed the operation of wiring of aortic aneurysm of various parts of the aortic arch twenty-two times altogether, including those here presented. In every instance the growth was so large that death in the early future was imminent and in several the wall of the sac was so thin as to be blue or blackish in hue and bloody serum was oozing through the skin. In most of the cases death because of the aneurysm eventually took place, but in many if not all he thinks life was prolonged and relief or partial relief from the severe pain was obtained. Much depends, of course, on the condition of the aortic wall, and if the aneurysm is due solely to traumatism there is a chance for success. On the other hand, if the vessel wall is extensively or severely diseased the treatment is like trying to mend a rotten hose. In four cases he has done a second operation on account of the artery giving away at another point, and in one case, a third, the patient finally succumbing to the rupture of a fourth weak spot. While it may be admitted that cases of direct prolongation of life are rare it must be remembered that the condition is, except in the very rarest instances, inevitably fatal, and any other treatment would be ineffective. Moreover, the condition is often unrecognized until it has become desperate. The author's conclusions are as follows: "The fact that no accident has occurred in any of the twenty-two operations I have performed leads me to believe that this very radical operation is not a dangerous one, the more so as I have no knowledge of any accident having taken place when the operation was properly performed by others. In one unreported case an attempt to wire a fusiform aneurysm of the carotid artery resulted almost immediately in hemiplegia and in another unreported case the mistake of using the negative pole in the growth loosened the clot already present and caused multiple emboli. 2. The operation is the only one that offers material hope of prolonging life, this having been prolonged in one case at least five years. 3. It is justified by the prompt relief of pain, which nearly always ensues and lasts unless the growth, extending in another direction, creates a new source of pain. 4. The diagnosis of saccural aneurysm should always be confirmed by X-ray examination, as this operation is contra-indicated in fusiform aneurysm."

Hematuria.

H. E. Pearse and E. L. Miller, Kansas City, Mo., (June 1), report a case of hematuria from tuberculosis of the patent urachus. The diagnosis was made first of an infected tuberculous cyst of the abdominal wall and it was excised. The operation was followed by a septic scarlatiniform rash, but the patient did not have the other symptoms of scarlet fever. Hematuria followed six days after the operation. Cystoscopic examination showed that the blood came from an opening in the bladder fundus, and on the eighth day following the first operation they again opened the abdomen through a mid-incision from the navel to the pubis, opening up the old cavity and extending into the space of Retzius. The wall of the incised cavity appeared infected. The open end of the patent urachus was found and that organ was excised, taking a portion of the mural peritoneum with it, down to the bladder fundus, where the heavy cord-like tubular structure widened and fused. The cord and bladder fundus for an inch on all sides of the opening were removed, and the bladder-wall infolded and closed with cat-gut sutures. After closing up the wound, the patient did well and the hematuria did not reappear. Summing up, this patient showed: 1. Tuberculous infection of a urachus with discharging sinus at umbilicus. 2. Hematuria, patent urachus. 3. Septic rash 4. Unexplained pyrexia; not typhoid, therefore, either tubercular or septic. 5. All clinical signs of tuberculosis in lung and bladder, yet we were never able to substantiate the clinical findings by bacteriologic examination of the discharges from these organs, even though the microscopic sections showed the tumor manifestly tuberculous.

New Instruments and Devices.

E. J. Gardiner, Chicago (April 20), describes an ophthalmic dynamometer which he recommends as an inexpensive and easily operated appliance for ordinary office purposes, giving accurate measurements of amplitude of accommodation and convergence and an approximate one of the relative ranges of the same. It consists of a medium bar, 50 centimeters long, on which the object holder slides, and carrying three scales, one in centimeters and millimeters, a second in dioptries-meter angles, and a third marked age in years, the numbers corresponding to age. This scale in conjunction with the dioptric scale indicates the amount of accommodation that is normal at different ages from 10 to 50 years. A convenient nose rest is attached to the proximal end of this bar, and it is also provided with a handle for the patient to hold it by. The test object furnished is a Prince card, on the back of which a 2 mm. dot has been stamped for measuring the amplitude of convergence. The lens holders are mounted on a graduated cross bar and can be adapted to the pupillary distance by means of a screw of double rotation. For ordinary clinical work the data furnished by this appliance in combination with the standard trial lenses will suffice, but if a more accurate measurement is wanted it may be readily obtained by computation.

P. W. Roberts, New York (April 20), gives the description of a traction frame devised for a dispensary patient with acute hip-joint disease whose treatment it was necessary to conduct in a dirty and ill-ventilated home. The child needed traction and fresh air, and by use of the frame was enabled to have

both. This traction device is added to the end of an ordinary gas-pipe frame, and is made of stock fittings which are inexpensive and readily obtainable. In assembling the parts the only caution necessary is the insertion of pins to prevent movement of certain pieces, which should be stationary.

E. Garceau, Boston (May 25), describes a new occluding ureteral catheter for functional renal tests which he claims is superior to those ordinarily used, in avoiding ureter leakage alongside the instrument. His catheter has a length of 90 cm. and a caliber of No. 11 French from its outer end up to within 20 cm. of its tip. From this point it tapers gradually and progressively to the tip, where it is of caliber No. 6 French. The end is open and has a flute tip; below the tip there are two additional openings through which urine may enter. It is easily seen that when once introduced the catheter fits into the ureter like a cork in a bottle and completely plugs it so that all the urine coming from the kidney must go through the instrument. A catheter laid in the bladder collects the urine from the opposite side. Three still more decided advantages are also claimed: 1. The capacity of the renal pelvis may be exactly determined by injecting measured liquid into it through the catheter. 2. Strictures near the lower end of the ureter may be easily and safely dilated. 3. A rapid diagnosis of the following conditions can be made; (a) solitary kidney; (b) kidney inactive from former disease; (c) blocked ureter. Garceau also describes the cystoscopes at length with figures, which are used with this catheter, and sums up as follows: "I may fairly claim the following for the instruments: 1. The cystoscopes will take Nos. 11 and 13 French occlusive catheters. 2. With the No. 11 French occlusive catheter the total output of urine will be collected from one kidney when the ureteral orifice is normal. When the orifice is enlarged the No. 13 French occlusive catheter may be tried. 3. The capacity of the renal pelvis may be measured with accuracy with the catheter, this being the only instrument which will do this unfailingly. 4. It is possible to dilate with the catheter, on account of its conical end, strictures of the lower end of the ureter. 5. It is possible to diagnose with rapidity and ease (a) solitary kidney; (b) kidney inactive from former disease; (c) blocked ureter."

After several years of effort along the line of tonsil forceps, G. P. Marquis, Chicago (June 1), thinks he has worked out an instrument which will simplify the operation for those who use the snare for the final removal of the tonsil. His forceps possesses two distinct advantages: 1. It seizes and holds the tonsils securely and will not pull out. 2. It will allow the snare loop to be passed over the handles. The grasping surface is composed of very fine sawteeth, which interlock. These teeth meet with a curve toward the forceps and away from the tonsils, so that traction on the forceps serves to make it seize the tonsil more firmly, instead of tending to pull out as in most forceps. The grasping surface is set on the forceps at an angle of 15 or 20 degrees, so that when the tonsil is seized the forceps can be held at the opposite corner of the mouth and still the entire surface of the forceps will be permitted to come into contact with the tonsil, and thus obtain a firm hold on the gland instead of a partial one with only the corner of the forceps. The greatest advantage, however, is in the movable handles. Each ring fits over a tooth-joint and is held in place by a spring, which is retained by a small screw nut. Being on a thread, this nut can be removed at any time should it be necessary to insert a new spring.

F. S. Simpson, Pittsburgh (June 1), describes and illustrates a device for moving patients from the operating table, from their beds or from one place to another. It consists of a piece of sheet-iron as long as the stretcher and nine or ten inches wide, hinged on to the side of the stretcher so that it can be raised and form a bridge over which the patient can be slid. It obviates the need of lifting the patient from the bed to the carrying stretcher and the danger of his dropping between them and seems less crude than the methods in common use.

Hospitals and Sanitaria

THE VALUE OF SANITARIA.

The time was, and it was not a generation ago, when the term sanitarium or sanatorium was looked upon with dread by the public, as it stood for a private asylum for the insane. Happily the words no longer convey such an impression to the lay mind. We have in this country scores of magnificent private hospitals, where persons suffering with mental diseases are given the best of care and treatment amid luxurious surroundings. In addition we now have sanitaria, where are treated nervous diseases, narcotism and alcoholism. These institutions are well known and contribute enormously to the well being of sufferers.

There has arisen, however, a new element in the sanitarian field, and now we have beautiful private hospitals for tired out people to take the rest cure, as well as private medical, surgical, obstetrical, gynecological, dietetic and tubercular institutions. The man who is worn out physically or mentally no longer finds it necessary to go to Europe for treatment by German specialists, a treatment by the way, which consists chiefly in reducing the bank balance of the unfortunate patient by the numerous "professors."

The fagged-out American is now sent to Battle Creek, French Lick Springs, Mudlavia, Dansville, Clifton Springs or to some other well known sanitarium. There may be found specialists in plenty who are leaders in their particular branch of medicine, men like Kahlo, Bolling, Jackson or Kellogg, whose reputations are countrywide. Their patients get back into normal condition because right living, right eating, right sleeping and the necessary "know how" make up their daily regime. This holds good in very many of the smaller institutions, where men especially trained are devoting their lives to the upbuilding of broken down bodies and minds.

These remarks lead us to observe that the splendid results obtained in the sanitaria of the country are causing a decided change in the minds of many people in this country, i. e., when they are bodily or mentally ill they want to go to a sanitarium. This accounts for the enormous and growing number of private institutions around all large cities. The man of means taken down with typhoid goes to a private medical hospital, one of the British "nursing homes." The man with the growling appendix is taken to Dr. Blank's private hospital. Mesdames A, B and C who can afford it are confined in private maternity hospitals. Banker Smith, Senator Brown and Lawyer Robinson, on the verge of nervous prostration from overwork, are hurried to Wildcrest-on-Sound or Cragmere-in-the-Mountains, where solitude and skillful treatment will restore them to their normal equanimity.

It is well this is so, for no home can begin to give the patient the surroundings, care, skill and attention which are so necessary and which form the raison d'etre of the average sanitarium.

Personally we are in hearty accord with the idea which takes the man or woman, ill from any physical, mental or anatomical twist, to the sanitarium or private hospital. In this place they are assured of the best of everything and it is a demonstrable fact that sanitarium patients recover far more quickly than those who do not have the advantages accorded the persons more favored.

In the South the private hospital idea has found a firmer footing than in any other section. Cities like Richmond, Norfolk, Nashville, Atlanta, Birmingham, Mobile, New Orleans, Memphis, Dallas, San Antonio and Houston, not to mention many smaller places, have splendidly equipped private medical, surgical and special hospitals or infirmaries which are always well filled. In many of these any well qualified practitioner may attend his own patients, a feature to be commended.

We do not advocate the sanitarium to the exclusion of the practicing physician, but we believe that the medical, surgical, obstetrical and gynecological institutions should permit the qualified medical man to take his patients into their rooms and to care for them exclusively. If this can be done the patient can receive all the benefits of the sanitarium as well as the services of the family physician in whom he places so great confidence. Closer relationship between the general practitioner and the owner of the class of private institutions above named would work to the advantage of all concerned.

THE NECESSITY FOR MORE HOSPITALS.

With the enlightenment of the people on matters pertaining to hospitals, the necessity for more institutions becomes apparent. The more intelligent of our citizens no longer look upon the hospital with awe. They recognize in it a place where sick and injured are given the best care and where disease can be overcome more rationally and easily than in the best regulated private home.

The change in the public attitude toward hospitals means that there must be an increase in number, especially in institutions for specific conditions.

A distinct innovation, but one which is bound to be followed by scores of others throughout the country before long, is the new hospital for appendicitis in Boston, opened by Dr. W. A. Brooks, Jr., of the surgical faculty of Tufts Medical School. It has been felt for some time that institutions for the medical and surgical treatment of diseases of the appendix would prove advantageous and it is believed Dr. Brooks' experiment will be crowned with success.

More ethical maternity hospitals are needed. More and more are women going to institutions for confinement and private hospitals charging a moderate fee, with certain provisions for worthy charity cases, would prove popular.

Children's hospitals are urgently needed. In the families of the poor are innumerable little ones suffering from disease, or crippled or deformed, whose lives might be spared for usefulness if they could be given sufficient institutional treatment. The present hospitals for children are doing a magnificent work, but their capacity is inadequate. How much better it would be if some of the money which now goes out of this country to save the souls of the so-called heathen in other lands could be utilized to save the poor little bodies of the helpless, suffering little people of our poorer districts. Buddhists, Mohammedans and the followers of Confucius are as happy in their religions as are Christians in theirs. Proselyting is a relic of barbarism. This is an age of conservation and what should we conserve if not the lives of our unfortunate children?

Isolation hospitals are needed, especially in the congested districts of our larger cities. According to the International Hospital Record: "The Massachuetts State board of health has inaugurated a campaign to urge the larger industrial centers of the State to maintain more isolation hospitals. The board calls attention to the particular need of these institutions and has made an investigation of the conditions relative to this subject throughout the entire State. The board finds that in the larger centers of population, such as cities where there are industrial centers and where a certain portion of the population live under conditions of congestion in tenement districts, a hospital where persons ill with communicable diseases may be isolated is an urgent need. Proper isolation of the sick cannot be maintained in many homes in the congested districts and every case of a communicable disease in these homes is a source of infection which may give rise to new cases, either by direct contact between the sick and the well or by some infected person. Other State boards of health may well give consideration to this feature of the promotion of public health."

In New York and indeed in all large cities there is urgent need of hospitals for nervous diseases. It stands to reason that this particular type of disease cannot be as successfully treated in general hospitals as in special institutions. The success of these hospitals is assured if the record of the Neurological Institute in New York can be taken as a criterion. It has been filled to its utmost capacity since opening a few years ago and it has made an enviable reputation as regards results of treatment and in the research work accomplished.

We believe the trend is toward specialization in hospitals as well as in practice and the time will come when institutions exclusively for general medical cases, general surgery, special surgery, obstetrics, gynecology, nervous diseases and the like will be so common as to evoke no particular comment. The hospital field is in its infancy despite the perfection it has attained.

AMERICAN HOSPITAL ASSOCIATION.

At Hotel Ponchartrain, Detroit, Sept. 24-27, the American Hospital Association will hold its fourteenth annual meeting and present indications point to one of the most helpful and largely attended gatherings in the existence of the organization. The presidential address will be delivered by Dr. Henry M. Hurd, secretary, board of trustees, Johns Hopkins Hospital, Baltimore.

Various reports will be presented by Dr. C. R. Holmes, trustee, City Hospital, Cincinnati; Dr. Thos. Howell, superintendent New York Hospital; Dr. Wayne Smith, Superintendent City Hospital, St. Louis; Mr. J. B. Draper, superintendent University Hospital, Ann Arbor, Mich.; Dr. R. O. Beard, University of Minnesota, Minneapolis; Dr. S. S. Goldwater, superintendent Mt. Sinai Hospital, New York City; Rev. G. F. Clover, superintendent St. Luke's Hospital, New York City, and Dr. Frederick A. Washburn, superintendent Massachusetts General Hospital, Boston.

The program is unusually good. It will include these papers among others:

The Economic Features and Feeding of Hospital Employees and Patients. Dr. H. T. Summersgill, Supt. Post-Graduate Hospital, New York City.

Hospitals and their Duty in Relation to the Prevention of Disease. Dr. Chas. P. Emerson, Dean of the Medical Department, University of Indiana, Indianapolis.

The Hospital Laundry. Dr. Winford H. Smith, Supt. Johns Hopkins Hospital, Baltimore.

A Contribution to the Problem of Convalescence. Dr. Frederick Brush, Supt. Burke Relief Foundation, New York City.

The Use of Salvarsan (606) in Hospitals. Dr. R. R. Ross, Supt. General Hospital, Buffalo, N. Y.

The Cost of Infectious Diseases. Prof. Jas. W. Glover, University of Michigan, Ann Arbor.

The Relation of the General and Special Hospitals in the Care of the Insane. Dr. Chas. K. Clarke, Supt. General Hospital, Toronto., Canada.

Hospital Organization with Special Reference to that of the Detroit General. Dr. W. F. Metcalf, Detroit, Mich.

The Question Drawer. Dr. Alice Seabrook, Supt. Woman's Hospital, Philadelphia, Pa.

Round Table Conference for Workers in Smaller Hospitals. Miss Louise Brent, Supt. Hospital for Sick Children, Toronto, Canada, and Miss Amy Armour, Supt. New Rochelle Hospital, New Rochelle, N. Y.

The Grading of Nurses. Mrs. E. G. Fournier, Supt. Minnewaska Sanitarium, Gravenhurst, Ont., Canada.

Prendergast offers a new "early and sure" diagnostic test for typhoid fever. It consists in the intradermal injection of one million or less dead typhoid bacilli. In twenty-four hours the non-typhoid patient shows a well marked area or redness around the point of injection, the reaction beginning to appear in twelve hours and disappearing in forty-eight hours. The typhoid patient shows absolutely no reaction. The test gives no constitutional symptoms, and is free from danger.

THE AMERICAN PROCTOLOGIC SOCIETY.

The fourteenth annual meeting, recently held in Atlantic City, was one of the most helpful in the history of the organization. Proctology is growing in interest with physicians, and the general practitioner, recognizing the importance of diseases of the rectum, is giving their study needed attention.

In view of the importance of this branch of medicine we are presenting in symposium an abstract of some of the more important papers presented at the session.

In the presidential address on the Relationship and Duties of the Proctologist to the Profession, Dr. John L. Jelks, of Memphis, Tenn., said:

Much harm has been done by the profession in the establishment of drug habits among the American people for the relief of constipation, as last year's symposium before the society would show. The proctologist is best equipped to study these cases, and arrive at the true etiology pointing to means of relief. The American people are living in tin cans and cracker boxes, sparing time only to catch the next train or meet the next market report, are storming their nervous systems with destructive toxins, filling sanatoria and health resorts with wrecks and lowering the scale of human usefulness and intelligence. None can more early observe the impending catastrophe, or turn on the search light than the procto-enterologist who calls together the aids of chemistry, physiology, pathology and bacteriology and a fair degree of understanding of the results of the methods and habits of life of the average American citizen, who is less careful in the selection of and preparation of his own food than that of his stock. Few of the hospitals of this country permit additions to their staff of specialists in proctologic work, hence the general surgeon and the general practitioner are doing the work in these institutions, about as these same men would do the ophthalmologic work, etc. The addition to the American Medical Association of a section in which the subjects gastro-enterology and proctology, or procto-enterology may be discussed, is recommended. Conservative life insurance companies are now convinced of the necessity of paying attention to the rectum and colon, and the writer has in his official capacity taken up with alert examiners cases of amebic infection, adenomata, papillomata, syphilitic and tuberculous diseases, which the examiner would have overlooked, and impressed him with this fact. He wondered if these and similar instances had not brought to the minds of medical referees the possible advisability of subjecting all applicants for large policies to a plurality of examiners. He advised the change of name of this society to The American Procto-Enterologic Society.

A REVIEW OF PROCTOLOGIC LITERATURE FOR 1911.

SAMUEL T. EARLE, M. D.,
Baltimore, Md.

J. F. Saphir, New York (*New York Med. Jour.*, 1911, Vol. 93, page 216), description of "A Syringe for Local Anæsthesia in Rectal Operations."

Erich Schlesinger, Berlin (*Deut. Med. Woch.*, February 9, 1911), "An Air Pessary for Keeping in Place Internal Hemorrhoids and Prolapse of the Rectum."

T. B. Noble, Indianapolis (*Am. Jour. of Obst.*, 1910, Vol. 61, page 259), an instrument, the "Anastomat" to facilitate the end-to-end anastomosis in extirpation of the rectum and sigmoid.

Dudley Roberts, Brooklyn (*The Proctologist*, 1910, Vol. 4), "A New Anal Speculum."

J. F. Churchill, Chicago (*Surg., Gyn. and Obst.*, Vol. XI, 1911, page 205), "Rectal Anesthesia."

L. W. Dryland, M. R. C. S., England, London (*Lancet*, 1910, Vol II, page 801), "An Operation for Prolapse of the Rectum."

Sidney Boyd replies to Dryland's paper (*Lancet*, 1910, Vol. II, page 1242).

L. L. McArthur, Chicago (*Jour. of A. M. A.*, 1911, Vol. LVII, page 363), "Rectal Prolapse."

K. A. J. MacKenzie, Portland, Ore. (*Surg., Gyn. and Obst.*, 1911, Vol. 13, page 218), "Treatment of Fistula in Ano Without Mutilation of the Sphincters."

A. Campbell Magarey, M. B., Adelaide (*Brit. Med. Jour*, 1911, Vol. 2, page 71), "Hypertrophied Papillae of Morgagni."

POST-OPERATIVE CARE OF RECTAL CASES.

WM. M. BEACH, M. D.,
Pittsburgh, Pa.

Success in the solution of proctologic problems is measured by the degree of perfection in the restoration of functional conditions involved; we must remove the disease, but it is quite as important that we have a care to vouchsafe to our patients perfect function.

Post-operative developments that need our attention are: 1. The disturbance of the nervous system. 2 The disturbance of the vascular system. 3. Digestive derangement. 4. Local conditions.

Post-operative neuroses manifest by (a) shock, (b) nervousness, (c) pain, (d) sphincteralgia, (e) retention of urine.

Vascular aberrations are shown by (a) hemorrhage, (b) infection.

Gastro-intestinal derangements are (a) nausea, (b) constipation, (c) ampullar impaction.

The local care of wounds should be applied daily by the operator.

If patients are given proper post-operative care, their dread of radical cures would quickly subside and rectal surgeons would escape untoward sequelæ they must otherwise be compelled to record.

PATULOUS ANUS: ITS CLINICAL SIGNIFICANCE.

ALFRED J. ZOBEL, M. D.,
San Francisco, Cal.

This condition results from an abnormal loss of tone in the sphincter muscles, which may be due to either a fault intrinsically within the muscle or to some disturbance in its nerve supply. When purely muscular the cause may be a direct injury to the muscle; an infiltration by a malignant or a syphilitic growth; a participation in a general muscular weakness; or the presence of a foreign body in the rectum which prevents the muscle from completely contracting. When the nerve supply to the sphincters is at fault the causative lesion may be either central or peripheral.

Complete fecal incontinence does not necessarily follow when the anus becomes patulous. The external sphincter, when but slightly affected, sometimes is assisted in performing its function by an extra effort of the will and through augmenting the muscle's action by strongly contracting the glutei muscles and bringing them together.

A brief report of a few very interesting cases of patulous anus is given to illustrate the different causes of this condition; among them being a case of infiltration of the sphincters by a carcinomatous growth low down in the rectum; a case the result of pederastic practices; a case the result of a participation in the general alcoholic neuritis; cases where it occurred in low intussusception of the bowel in children; and two cases where it appeared as one of the early signs of locomotor ataxia.

THE SURGERY OF COLONIC CONSTIPATION.

A Report of Thirteen Cases.

LOUIS J. HIRSCHMAN, M. D.,
Detroit, Mich.

After presenting the histories, radiographs and reports of operative treatment of thirteen cases of obstipation due to colonic obstruction, dilatation, stricture and adhesions, several principles in dealing with cases requiring colonic surgery are epitomized in the following conclusions:

1. Most cases of chronic constipation are colonic in origin and many are obstructive in type.

2. Many cases of so-called chronic constipation are therefore really colonic obstipation.

3. Many cases of colonic obstipation suffer from chronic dilatation of the colon with or without ptosis.

4. Radiography is a most vital necessity in the diagnosis of all cases of chronic interference with bowel function. Its negative value may be greater than its positive.

5. A chronically over-distended colon, whether adherent or not, never again becomes a normally functionating bowel.

6. Intestinal adhesions usually tend to recur in increased intensity and adhesions only cause symptoms when put under stress or tension.

7. The prevention of tension in physiologic rest to the affected organ and colonic rest are obtained only by colectomy, colostomy, or exclusion.

8. Colectomy as advocated by Lane is an operation seldom advisable and has many obvious objections from the standpoint of patient and physician. It is too grave a procedure to be undertaken except in the most aggravated cases.

9. Strictures, neoplasms and other obstructions should be removed by excision of the diseased tissue and lateral anastomosis of the bowel.

10. Exclusion by ileo-colostomy is safe, easy to perform and most satisfactory in the restoration of normal peristalsis and consequently normal health.

11. Results speak more eloquently than words. After an experience with nearly fifty cases requiring exclusion or resection of the colon for obstructive constipation, with but one failure, I feel fully justified in recommending it to your careful consideration in all cases of aggravated colonic obstipation,

whether congenital, post-operative or dependent on some mechanical obstruction or narrowing of the bowel.

THE ROENTGENOLOGIC METHOD OF EXAMINING CASES OF CONSTIPATION AND OBSTIPATION.

ARTHUR F. HOLDING, M. D.,
New York.

The normal position of the colon and the parts of the intestine that can ordinarily be visualized by means of bismuth ingesta and the X-rays, are: 1. The first portion of the duodenum. 2. The jejunum. 3. The ileum. 4. All parts of the colon. In some cases the second and third portions of the duodenum and the appendix can be visualized.

The accuracy, reliability and interpretation of findings by this method, however, may well receive our careful attention.

In the first place, this method does not cause gastro-intestinal symptoms, such as nausea, vomiting, diarrhea, constipation, gastro-intestinal or general symptoms, other than are present when buttermilk alone is ingested; it is therefore logical to assume that the buttermilk-bismuth mixture does not irritate the mucous membrane and gives a true picture of the motor activities of the patient's intestines.

By fluoroscopy and by radiography in the erect or prone positions, or both, an accurate outline of the lumen of the tract can be obtained, especially where there is any obstruction to the onward progress of the intestinal contents. The individual peristaltic waves can be accurately registered on a special photographic emulsion that is far more sensitive than the human retina and the progress of the persistaltic waves can thus be seen functionating under normal conditions, the patient and his abdominal contents not relaxed by a general anesthetic; the secretions and motility not disturbed by the presence of an irritating foreign body such as a stomach tube; the conclusion not based on inference deduced from chemical reactions of juices obtained by abnormal and irritating measures. The organic outline obtained in X-ray plates is even more conclusive and reliable than the information obtained by the sense of touch, whether that be applied over the intact abdominal wall or to the viscera laid bare by an exploratory incision. The radiographic emulsion and the retina are the two most sensitive methods of observation possessed by man, far outranking in their acuteness either the drum, membrane or the sense of touch. It has been contended that the abdominal operation was more accurate than an X-ray examination, because it laid bare the "naked truth;" the finality of this argument is based more on the sound of the words than in fact, as anyone knows who has had an opportunity to use both methods on the same case.

On the other hand, there is great danger of arriving at wrong conclusions in using the X-ray method, especially when the examination is based on too few plates or is only an examination of a suspected part of the 30 odd feet of intestinal canal.

We must not let seniority interfere with our recognition of the superiority of methods employed by us for diagnosis. No progressive proctologist or surgeon should depend on any one method but should use them all in examining cases, and in obscure cases he should not hesitate to insist upon supplementing the more common methods of examination with a radiologic examination, regardless of the expense involved.

The various lesions and conditions that have been successfully shown by the X-ray method are—atonic and spastic constipation; congenital anomalies of the tract such as nonrotation of the cecum and narrowing or insufficiency of the ileo-cecal valve; adhesions; kinks, with or without adhesions (including Lane's,); ulcers; tumors within the canal and tumors pressing upon the intestines from without.

It must be borne in mind that a palpable tumor disappearing after the administration of an enema or a cathartic, even if followed by improvement in the patient's condition, is not proof that the tumor was feces.

The roentgenologic method of clarifying difficult conditions present in patients will no doubt be gladly welcomed and widely utilized by surgeons, who, as a class, deserve our greatest respect and admiration for their courage in attacking many ordinarily undiagnosable conditions by cutting boldly into the abdomen and making their diagnosis by inspection and thereupon instituting impromptu surgical procedures in order to correct the conditions found. Many times the condition found within the abdomen is entirely different from that which was expected. When these difficult situations can be accurately known before the operation is begun; when the surgical procedures can be accurately predetermined; when much time (previously lost exploring the abdomen) can be saved; when the duration of the patient's anesthesia can be proportionately shortened; when the surgeon will be saved the tremendous nervous strain and responsibility of emergency decisions and procedures; the surgeon must recognize that his operative statistics will necessarily be better, his patients are going to recover quicker, and more of them, and finally the years of a surgeon's own life and usefulness will be increased.

The only great drawback to the general adoption of this method is its necessarily great expense.

VALVOTOMY.

GEORGE B. EVANS., M. D.,
Dayton, O.

Valvotomy is a decided factor for the relief of proctitis, for the relief of obstipation and constipation, for the relief of distinct and isolated ulceration of the distal side and adjacent to the valve and in the elimination of bladder and prostatic symptoms reflexly.

Every case of valvular trouble is accompanied by pathological changes in the valves, and, if in the valve, then in the adjacent tissues. Valvular obstructions are prolific of more trouble than we give them credit for and are causative factors in the production of obstipation in a large per cent. of our cases.

Valvotomy is a justifiable operation, as it not only relieves obstipation and constipation, but often causes reflex and neurasthenic symptoms to disappear; frequently ameliorates and even cures proctitis, and, by virtue of the drainage it secures, lessens the tendency to toxemia from intestinal origin.

MULTIPLE ADENOMATA OF THE RECTUM.

E. H. TERRELL, M. D.,
Richmond, Va.

This was a report of a case of multiple adenomata of the rectum and sigmoid, in a patient 42 years of age, who had been suffering for the past five years. He had frequent stools with mucus, some blood and a great deal of tenesmus. He was having from eight to ten stools daily. He suffered considerable pain throughout the abdomen. Examination showed numerous small tumors scattered through the rectum and sigmoid. Microscopic examination showed these growths to be adenomata. The bowel was intensely inflamed and contained many ulcers. Under irrigation of the bowel with boric acid and the administration by mouth of castor oil and aromatic syrup of rhubarb, improvement was almost immediate. In three and a half months the patient had gained seven and a half pounds, and was comparatively comfortable. The tumors were reduced in size and the ulcers gradually disappeared. While the adenomata are still present the patient is symptomatically cured.

There is unusual value in the administration of equal parts of rhubarb and castor oil, and in simple ulceration of the rectum this treatment alone is almost a specific. In the many reports of cases in which adenomata of the rectum are supposed to disappear, this condition must be merely a hyperplasia with inflammation and not true tumors, for the latter are permanent. As regards the predisposition of adenomata to become cancerous, attention is called to the fact that these tumors are benign and are consequently composed of mature tissue, so they can not themselves become immature tissue—which is malignancy. Instead of a malignant degeneration, it is likely that matrices of immature tissue have also been deposited where so many matrices of mature tissue are found, and the growth of the adenomata, with the accompanying inflammation and ulceration, stimulates these immature matrices to develop into cancer; or, else, immature matrices are formed from the ulcers, just as they develop from ulcers in cancer of the stomach. The simple treatment proposed not only relieves the patient's symptoms, but by lessening the inflammation and curing the ulcers it also decreases the chances for subsequent malignancy.

PIGMENTATION OF THE RECTUM AND SIGMOID.

JEROME M. LYNCH, M. D.,
New York.

Pigmentation is divided into exogenous and endogenous.

Endogenous	Exogenous.
Hemochromatosis.	Pigmentation due to Chemicals
Pseudomelanosis.	or
Melanosis.	Metallic Pigmentation.

The origin of pigment, and Pick's theory concerning the origin of melanosis in pigmentation of the large bowel, are as follows: The connective tissue cells possess an enzyme, tyrosinase, which converts aromatic bodies into melanin.

After having reviewed the subject of pigmentation, he reached the conclusion that hemochromatosis is of bacterial origin; that the extent of the disease is dependent upon the severity of the infection; that the probable source of infection is the intestinal tract, possibly starting as an intestinal putrefaction; that this intestinal putrefaction lowers the vitality of the tissue, and thereby the cells of the mucous membrane lose their protective properties, consequently bacteria find ready access to the portal circulation. As a result of this the chromo-

genic function of the liver is interfered with, consequently the liver becomes surfeited with pigment, and is not capable of abstracting the iron from the hemoglobin, with the result that an excessive amount of pigment is circulating in the blood. That the cells of the intestine probably have a selective action for these pigments, and as a consequence they are deposited in the tissue. That local hemochromatosis may be due to repeated local hemorrhages, followed by infection, and that as a result of this infection the bacteria cause a hemolysis of the blood, forming pigment which resembles hemosiderin, hemotoiden and hemofucin. That these pigments may, or may not, give a reaction for iron.

So little is known about the structural products of melanin or melanoids, that it is difficult to give the origin of those bodies. Undoubtedly there are several distinct melanins, and their origins must also be distinct. The ferruginous melanins should be considered as originating from the blood pigment, until further research proves the contrary. Most melanins yield endol, skatol and pyrrol. It has been proved that the enzyme tyrosinase is present in the tissues and further that this enzyme is capable of converting aromatic bodies into melanin.

We admit that Pick's theory is ingenious and worthy of consideration, but there are points that are hard to reconcile with our present conception of cellular activity.

It is hard to understand why he should attribute to connective tissue cells a highly specialized function; this is directly opposed to all our preconceived notions of this cell, which heretofore has been supposd to have only one function—that of binding other tissues together, with an enzyme of its own nourishment.

It is a well known fact that the cells of the mucous membrane have the power of neutralizing poisons and converting them into insoluble compounds. In the case of mercury and lead they are converted into sulphides, and as a result of this change, blackening of the tissues, somewhat resembling melanin, takes place.

Dr. Tuttle and the writer believe that the cases reported by the English observers were as stated, and should not have been included in Pick's series. Further, that as a result of the action of sulphide of hydrogen on the iron pigments, an insoluble sulphide of iron is formed, blackening of the tissues takes place. This is a separate and distinct form of pigmentation, and should not be confounded with melanosis.

OBSERVATIONS UPON THE RELATIONSHIP OF TUBERCULOSIS TO PERI-RECTAL SUPPURATIONS

COLLIER F. MARTIN, M. D.,
Philadelphia.

Pulmonary tuberculosis is so frequently associated with cases of peri-rectal suppuration that the writer reports a series of 376 consecutive cases, 75% being males, and ranging in age from 7 months to 87 years. The majority of these cases (322) occurred in the most active period of life, from 20 to 60 years.

The cases are divided into four major groups; the actively tubercular (144 cases), the chronically tubercular (68 cases), the phthisenoid (20 cases), and those patients in apparently good health (55 cases). This would indicate that at least 22 cases or 61% were cases of known tuberculosis.

There were 309 operations performed on 306 patients, under various anesthetics; spinal anesthesia 145 times, ether 54 times, and local and other anesthetics on the remaining. Spinal anesthesia was chosen where no other preference was expressed by the patient or the attending physician, on account of the associated tuberculosis.

Following these cases for the past four years the author traced thirty-seven deaths, of which thirty-four died of active tuberculosis or its complications.

The abscesses or fistulæ in most of these cases could not be classified, from their appearance, as being locally tuberculous. Where the tubercle bacillus was easily recovered from the tissues or discharges, there was usually a very active pulmonary infection present.

The writer believes that the usual explanation of the association of pulmonary tuberculosis with rectal suppuration lies in the fact that any pulmonary lesion, however small or inactive, may so alter the patient's vital processes and so lower the opsonic index as to make him particularly susceptible to pyogenic invasion. The same may be said of pyogenic infections in general, but the peculiar anatomic conditions existing in the rectum and its very active physiologic function make this a fertile region for external and internal trauma with subsequent inflammation and infection.

Traumatism is considered to be the chief active factor in impairing the integrity of the tissues. A careful lung examination should be made in all cases of peri-rectal suppuration, and a careful and extended supervision of the patient's general health for a long period after all surgical treatment had been discontinued should be observed.

The vital consideration in these cases is not whether the local lesion is tuberculous, but has to do with the presence or absence of active or latent tuberculosis in the patient, and his chances of having good general health after surgical intervention.

ANO-RECTAL DISEASE DUE TO VENEREAL INFECTION.

JAMES A. MCVEIGH, M. D.,
Detroit, Mich.

Venereal disease is an important factor in the etiology of disease in all parts of the human system. Regional relationship of genital organs to the anus and rectum renders the latter especially prone to this kind of infection. Venereal disease of the anus and rectum is either direct, through practice of vicious habits, or indirect, or accidental, through extension of infection to these parts from other sources. There is less direct infection of this nature in this than in foreign countries. Gonorrhœa, chancroid and syphilis are the principal venereal factors in ano-rectal disease.

FURTHER OBSERVATIONS ON PRURITUS ANI BASED UPON ORIGINAL RESEARCH.

DWIGHT H. MURRAY, M. D.,
Syracuse, N. Y.

This paper is a continuation of the work that I have been engaged in for the past two years and which I presented to the American Proctologic Society, at the Los Angeles meeting, in 1911.

From my experience since discovering that a skin infection is the important factor in pruritus ani, I believe that we are now in a position to state that there may be two varieties of pruritus ani; one that may be coincident with some of the diseases of the rectum and in which the skin infection is not present. This form is pruritus ani simplex. The variety which is chronic in its character, and in which the skin infection is present, is coccigenous pruritus ani.

I am continually seeing patients who have all varieties of rectal diseases, including chronic diarrhea and proctitis, in many of which there is a leakage of moisture upon the anal skin; in very few of these cases do I find pruritus ani, and I believe that when it is present, it is coincident rather than having been caused by these discharges occurring in various rectal diseases.

I am presenting a resume of an examination of 900 consecutive cases, in which there were 490 cases of constipation, 369 of hemorrhoids, and 94 of pruritus ani. Of the 94 cases which gave a history of pruritus ani, 5.5% of the 900 cases examined had pruritus ani and were constipated; 2.3% had hemorrhoids; 1.2% had some form of anal growth; 2.2% had ulceration; 2.5% had diseased crypts; 1.3% had hypertrophied papillæ; .03% had polypi; .03% had fistulæ. The relatively small percentage of each of these conditions that were present in the pruritus ani cases shows that they were coincidental when present and could not be classed as causes of pruritus ani.

Thirty-two of these 94 pruritus cases have been examined bacteriologically and all of them showed streptococcic skin infection as the predominating condition. The excess moisture and the infiltrated condition of the skin in these cases are due to the low grade inflammation caused by skin infection and are not the result of moisture coming from the inside of the anal canal.

I am showing photographs of petri-plates of a typical case, showing the immense numbers of streptococci at the time of the first examination; another photograph of the same case, showing that streptococci were not present in the culture taken from the anal canal, and another photograph of a petri-plate, of the same case, after four months' treatment (one month after itching had ceased), in which last photograph, no streptococci were present. From some reports received I think stock vaccines will not give good results because they are made of a different branch of the streptococcic family than the one causing pruritus ani. The conclusions of the first year's work still hold true, and my conclusions of my second year's work are as follows:

1st.—It is shown by the nine hundred consecutive cases of rectal diseases, that constipation and hemorrhoids, or any lesion, are coincidental or may be predisposing, but not the exciting cause of pruritus ani.

2d.—Even when there is a discharge of pus or other moisture on the skin about the anus it is not the actual cause of pruritus ani, unless there is a streptococcic or other infection of the skin. They may exist together but are then only a coincidence.

3d.—All investigators, in making cultures, should use in addition to the hard media, the liquid media and Gordon's series

of carbo-hydrates, if they wish to differentiate the streptococci and other bacteria.

4th.—Avoid excessive reaction.

5th.—Use small initial doses.

6th.—Give subsequent injections only after the previous reaction has completely subsided.

7th.—I suggest a change in the nomenclature of pruritus ani, by recognizing two varieties: pruritus ani simplex, and pruritus ani coccigenous.

COLONIC DILATATION (CONGENITAL AND ACQUIRED) AS A FACTOR IN CHRONIC INTESTINAL OBSTRUCTION (OBSTIPATION).

SAMUEL G. GANT, M. D.,
New York.

My experience warrants the belief that both acquired and congenital (Hirschsprung's) dilatation of the colon are fairly common, and that they respond satisfactorily to treatment (usually surgical). Non-congenital dilatation of the bowel might result from paresis, gourmandizing, digestive disturbances or chronic intestinal obstruction, however caused, and when present leads to constipation, fecal impaction, distension of the bowel, angulation, twisting and ptosis of the colon. This class of patient suffer much less from intestinal auto-intoxication than persons afflicted with acute constipation. In my cases the colon completely filled the abdomen, measured from three to many times its normal size, was considerably thickened, characterized by dilated blood-vessels and closely resembled an enormously hypertrophied stomach—for which it was mistaken in two instances. I have personally observed seven cases of Hirschsprung's disease and a still greater number of acquired dilatation, wherein the patients had an evacuation every two or three weeks, following purgation and frequent enemata; except in two instances, that of a young boy, who moved his bowels only once in two months, and, of a young woman who succeeded in accomplishing this but four times yearly. The chief manifestations of the condition were those of chronic constipation and fecal impaction, plus mal-nutrition, abdominal distension, pot-belly, extraordinary length of time between movements and very large amount of feces discharged when an evacuation occurred. The diagnosis is fairly easy in the presence of the above symptom complex, because, with the aid of inflation and palpation or the assistance of the X-Ray, the size and position of the colon can be defined.

I maintain that temporary improvement occasionally follows medication and physical measures, which strengthen the bowel or minimize the effects of auto-intoxication consequent upon fecal retention, and that patients may for weeks or years be kept fairly comfortable when given close attention and the bowel is kept open with lubricating oils, laxatives and frequent high enemata, but that a cure is not possible except through one of the following surgical measures, viz:—1, coloplication; 2, colopexy; 3, resection; 4, intestinal exclusion; 5, colostomy; 6, tapping.

I find coloplication effective in both congenital and acquired dilatation, without bowel displacement. Colopexy proved satisfactory where there was ptosis with moderate dilatation, but, in aggravated vases where the bowel was both enormously dilated and markedly ptotic, I advise coloplication and coloplexy, using the infolding sutures for suspensory purposes.

I advocate resection of all or part of the colon where it is irretrievably large, displaced or bound down by adhesions. Exclusion has proved satisfactory, and I can report five cases treated by dividing the ileum near the cecum and completing the exclusion by ileo-sigmoidostomy.

Colostomy is looked upon with ill-favor, because patients strenuously object to an artificial anus, and a secondary and dangerous operation is required to re-establish continuity of the intestines. Tapping deserves no consideration, because it is unscientific, dangerous and ineffective. I frequently combine the above operations with appendicostomy or cecostomy, so that through and through irrigation can be immediately established and the period of convalescence shortened. Colonic exclusion and colostomy are considerably less dangerous than resection, and are usually effective, since the bowel rapidly contracts after their establishment.

ACUTE POST-OPERATIVE INTESTINAL PARESIS.

J. A. MACMILLAN, M. D.,
Detroit, Mich.

1. Definition: A paralysis of a portion of the intestine which suddenly dilates and becomes the receptacle for gas and fecal material.

2. Etiology: Not known, but probably due to sepsis, trauma, etc.

3. The lesion is probably in the sympathetic nervous system.

4. The treatment consists of gastric lavage, enemata, and enterostomy.

5. Precautions attending a secondary operation.

INTRA-RECTAL RUPTURE OF SUPPURATING SINUS FROM HIP-JOINT DISEASE.

RALPH W. JACKSON, M. D.,
Fall River, Mass.

To meet the difficult problems presented by an unusual case, involving the rupture, internally, into the rectum, and externally, near the anus, of a sinus from a tubercular hip, I sought, by radiographic study, research of literature and correspondence with proctologic and orthopedic authorities, information as to frequency, pathology and operative possibilities of such cases; and with the following conclusions:

1. That intra-anal or rectal rupture of a coxitic sinus occurs rarely but not with extreme infrequency.

2. That such opening involves probably considerable mixed infection of the joint beyond what would occur if the opening were external.

3. That likewise tubercular infection of the rectum might arise.

4. That intra-anal opening is quite easily treated and much of the mutual risk of infection removed.

5. That intra-rectal opening is in most cases (unless the sinus approaches from low down) too high to turn aside in any way and give an external discharge and consequently the risk must continue.

6. That operating for such purpose is likely to create at once a complete rectal fistula where none existed before, because of the surgical difficulties in the way of securing permanent closure of the internal opening.

7. That it is a very rare and most unfortunate occurrence for such an abscess to point both externally and internally; an external incision should be made, if sure that internal rupture has not occurred; but avoided, if possible, if it has occurred, because of the fistula thereby created.

8. That whatever the etiology, such a fistula is a particularly troublesome one, and the wisdom of trying to better it surgically is fairly debatable ground.

PRELIMINARY REPORT OF TWO CASES.

(a) Keloidal Tuberculoma.
(b) Fibromatous Keloid.

ALOIS B. GRAHAM, A. M., M. D.,
Indianapolis, Ind.

I presented a brief preliminary report of two exceedingly rare rectal cases. Both are of interest in that they emphasize the following points:

1. A benign neoplasm, involving the peri-anal, peri-rectal and surrounding structures, may be the end-result of an inflammation of these structures.

2. An inflammation of these structures is due, in a large proportion of cases, to extension from an anal or rectal inflammation.

3. A benign neoplasm may produce a marked deformity of the structures which it involves. (The writer showed photographs of his two cases.)

4. A careful pathologic study is essential for making a correct diagnosis of the neoplasm.

5. A correct diagnosis of the neoplasm can be made, and yet its etiology remains vague.

I am giving an extended history of the cases, together with a description of the operations performed. The pathological report shows one case to be keloidal tuberculoma; the other fibromatous keloid. The first case insisted upon leaving the hospital and was discharged as improved. The second case is still under observation, hence the preliminary report.

My object in reporting these two cases is my belief that an anal or rectal inflammation was the origin of the diseased conditions presented by these patients. Both cases, therefore, emphasize the necessity for and the importance of rectal examinations. It matters not how slight the ailment may be, a careful inspection of the anus and rectum should be made. If such a rule were followed by every physician and surgeon, such case reports would not be possible.

SOME PRACTICAL POINTS GLEANED FROM THE OBSERVATIONS OF A PROCTOLOGIST.

SAMUEL T. EARLE, M. D.,
Baltimore, Md.

I am reporting a case of primary tubercular ulceration of the right buttocks, which was not connected with the rectum by a fistulous tract. In this respect it differed from the one reported in my work on "Diseases of the Anus, Rectum and Sigmoid," Figure 62, page 201. It was excised by the thermo-cautery knife, after which it healed very promptly.

I also report a very aggravated case of pruritus ani, which resisted local applications, autogenous vaccines and treatment by the X-Ray. Under local anesthesia I found an ulcer over

the posterior commissure just above the internal sphincter, which connected on each side with numerous submucous and subcutaneous superficial fistulæ which enveloped the entire anal margin and connected with each crypt of Morgagni. The ulcer was incised, the scar tissue at its base removed, and the fistulous tracts were all opened up. There was only an occasional twinge of itching following the operation, and he made a speedy recovery.

THE SUBNORMAL COLONIC FUNCTION AS A DIATHESIS.

J. Coles Brick, M. D.,
Philadelphia,

I was led to investigate the causes of a persistent case of constipation, which had existed since childhood, and which was of an average duration of seven days, in a young woman of 18 who was in seemingly good health, but whose father had the same condition and had subsequently developed a case of chronic arthritis deformans. The young woman had been treated by many doctors and by many methods, but all without any more than temporary success.

Resort was finally made to X-Ray examination after giving a bismuth meal. The plates showed that at two points, viz.: the cecum and the rectum, the colonic contents remained for three days, and operative measures were decided on. No abnormality was found except an old and thickened appendix, containing three concretions and the tip being adherent to the ovary. As there were some moderate sized hemorrhoids present, these were removed at the same time as the appendix, and the patient made a good recovery. The *X*-Ray plate showed a very moderate degree of visceroptosis, and a supporting belt was ordered. The patient has had a regular bowel movement daily, with the use of a mild laxative, which it had been impossible to produce at any previous time.

Examination of the *X*-Ray plates showed a bilateral calcification of the costal cartilages, which I thought was an early symptom of arthritis deformans, and after discussing the various theories of the cause of the disease, I accept the theory that it is a toxic trophoneurosis affecting the cerebro-spinal nerves, with its infectious focus in the gastro-intestinal canal.

I am certain that all cases of persistent constipation should be examined by all the means at our command, and finally, not only by the administration of bismuth by the mouth, but by injection, with *X*-Ray examination: conditions requiring operative interference will frequently be found by this means, and corrected surgically.

Arthritis deformans is a most ancient disease, there are evidences of many cases existing before the pyramids were built, it is not only possible but probable that the infection comes from the intestinal tract, and if the cause is removed early before the destructive changes have occurred these cases can be cured, and even the advanced cases have their progress arrested.

THE THREE-STEP-OPERATION IN TUMORS OF THE SIGMOID AND COLON.

James P. Tuttle, A. M., M. D.,
New York.

The operation is as follows: Incision is made in the outer border of the left rectus and the tumor is brought out on the abdominal wall. The peritoneal layers of the meso-sigmoid are incised well above and below the tumor, and stripped back so as to expose the blood-vessels, fat, and glands, which may be in the meso-sigmoid; the latter are stripped toward the intestine until the blood-vessels are bare and the supply to the bowel is easily visible. The sigmoidal artery is tied in two places and cut between and the proximal stump dropped back into the abdominal cavity. The raw surface in the abdomen is covered over by suturing the two peritoneal layers of the meso-sigmoid together over the arterial stump. The two legs of the sigmoid are sewed together laterally to make a spur, after the method of Bodine. The peritoneum is sewed around the bowel; the muscles drawn together; the skin wound closed, attaching it to the bowel. In forty-eight hours the tumor is excised by a V-shaped incision. Two days later, the spur is cut away by pressure-forceps. After this is completed a long rectal bougie is passed up through the bowel beyond the artificial anus, in order to press the spur back and obtain a large caliber at the site of the resection. When the wound made by the pressure-forceps is healed, the artificial anus is closed by the extra-peritoneal method of the author.

X-RAYS AS AN AID IN MAKING DIAGNOSES OF CONDITIONS IN THE RECTUM AND OTHER PORTIONS OF THE LARGE INTESTINE.

J. R. Pennington, M. D.,
Chicago.

While the rectum is easily inspected by various specula, and the sigmoid is less readily accessible by the use of sigmoidoscopes, such as the one with insufflation, the colon is inaccessible and its exact position difficult to ascertain. Very often it is also difficult to determine and locate pathologic conditions in the large intestines.

Until recently, the means of diagnosis have been limited to those used in other portions of the alimentary canal, viz.: Inspection after dilatation of the bowel with air or water, palpation, percussion, and trans-illumination. All of these are open to the objection that they are uncertain.

I observed in the latter part of 1899, that by introducing some agent into the large bowel which would cast a shadow, the *X*-Rays may become useful in making a diagnosis of conditions in the twin cavities. It is only recently, however, that such procedures have become of practical value.

A bismuth meal is useful in diseases of the stomach or duodenum, the agent being suspended in milk, acacia water, thick soup or some similar vehicle.

But for the large bowel, the action of bismuth per os is very slow. One author estimates that it requires from 12 to 15 hours for the bismuth mixture to reach the ileo-cecal valve; about 24 hours to gain the transverse colon, and 36 hours to penetrate to the sigmoid. By the method advocated this is done, so to speak, instantaneously.

Coming now to the technic: The patient's bowels are first cleansed by means of laxatives and injections. He is then placed in the knee-shoulder position, and from 25 to 30 ounces of the mixture used for casting the shadow injected into the large intestine. For this purpose the author uses an ordinary irrigator and a short rectal tip. A long rectal or colonic tube for administering the injection is unnecessary. After the suspension is injected the patient lies on his right side for a few moments so part of the menstruum may pass into the cecum. He is then placed in either dorsal or ventral position on the radiographic table and the picture taken.

The following officers were elected for the ensuing year: President, Louis J. Hirschman, M. D., Detroit, Mich.; vice-president, Alois B. Graham, M. D., Indianapolis, Ind.; secretary-treasurer, Lewis H. Adler, Jr., M. D., Philadelphia, Pa.; executive council, John L. Jelks, M. D., Memphis; Louis J. Hirschman, M. D., Detroit; J. Rawson Pennington, M. D., Chicago; Lewis H. Adler, Jr., M. D., Philadelphia.

The following were elected Associate Fellows of the Society: Dr. Rollin H. Barnes, of St. Louis; Dr. Barney J. Dreyfuss, of New York, and Dr. James A. Duncan, of Toledo, O.

The 1913 meeting will be held in Minneapolis.

Moving Picture Tuberculosis Exhibits.

The New York City Board of Health has adopted a novel method of bringing practical knowledge of tuberculosis direct to the masses, who suffer so markedly from the scourge. For a number of years the department gave stereopticon tuberculosis exhibitions at night during the summer months in the public parks. In 1911 the tuberculosis committee of the Charity Organization Society assisted in the work by furnishing a lecturer for a number of the exhibitions. There was difficulty in making a great number of people hear the remarks of the lecturer so that this summer Health Commissioner Lederle has put on the outdoor screens five of the best "tuberculosis" and "health" films, accompanied by the usual stereopticon views. The results in the form of increased attendance and wider dissemination of information to the public have demonstrated to Dr. Lederle and his assistants that they are on the right track. The department is making strenuous efforts to reduce the number of tubercular cases to a minimum and an enormous amount of work is being done to enlist the assistance of the general public.

A bony ankylosis of the hip is often to be preferred to a joint, freely movable, but lacking in muscular control.

Blood in the stools may be of the utmost significance and warrants careful study and laboratory examination.

Empyema of childhood usually recovers if the operation for drainage is performed early.

Diet, Hygiene and Nursing

NUTRITION AND DIGESTION.*

JOSEPH MERZBACH, M. D.,
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Until about ten years ago digestion was studied in the test tube under the impression that the results obtained could be applied without any modification to the animal organism. These efforts were encouraged by the fact that it was not difficult to obtain the secretions of the different digestive glands. Saliva can be collected with great ease and was found to exert a very decided influence over starch. A ferment was discovered in the saliva which was found to have a very different range of distribution in different animals. Animals living on an exclusive meat diet do not possess any of this ferment, ptyalin, while animals feeding on a mixed diet have one of great efficacy. The most effective ferment is found in the saliva of animals subsisting on an exclusively vegetable diet.

As far as human beings are concerned the ferment attacks the raw starch with great difficulty, while boiled starches are modified by it with great ease. I have here a slice of boiled potato, another slice that is raw, both of which have been exposed for twelve hours to equal quantities of saliva derived from the same person. If we add iodine to these slices you will find that the unboiled potato gives an intense blue reaction, showing the presence of a good deal of unchanged starch, while there is hardly any blue coloring in the other. In the latter the starch has been changed into sugar, as can be shown by testing with Fehling's or Haynes' solution. By boiling with either solution the fluid obtained from the boiled potato we obtain a very decided reaction, while that of the raw potato shows but a very slight discoloration.

That gastric digestion is concerned in the digestion of albuminous bodies has been known in the early studies of this question. Now what happens to these bodies in the stomach? They are changed into soluble and diffusible products; by diffusible we understand a condition which permits a substance to penetrate animal membranes. If you bring albumin into an animal membrane the albumin does not penetrate the parchment, which is immersed into distilled water. If we examine the water by the Biuret-reaction we find no trace of albumin nor of its derivatives. The presence of albumin would be shown by the appearance of a more or less intensive violet coloring. You see the reaction is negative. In the other experiment I add pepsin and hydrochloric acid. It becomes soluble and soon products are formed which go through the animal membrane and are absorbed by the surrounding fluid. You notice the intense Biuret-reaction which shows the presence of peptones, the digestive products of albumin.

We find in the stomach another ferment, the rennet-ferment, which has the function of assisting in the digestion of casein. Lately the contention has been raised that we have in the stomach a ferment that attacks fat. It is rather difficult to prove the correctness of this statement, for a Russian physiologist has discovered the interesting fact that the moment we introduce much fat into the stomach juices contained in the duodenum flow back into the stomach. This can be shown very easily by a simple experiment. If we give to a patient bread or milk we obtain a perfectly clear gastric juice without any admixture. If we give to the same patient plenty of fat, cream, butter or bacon we obtain a greenish fluid showing that bile has flowed from the intestines into the stomach. This means, of course, that not only the bile has entered the stomach but with it the intestinal and pancreatic juices, the latter containing the fat-splitting ferment steapsin. Therefore, we cannot tell if the stomach supplies its own fat splitting ferment or whether this originates in the duodenum.

The stomach has no influence over carbohydrates; the saliva is alkaline and ceases to act in an acid medium, and is therefore ineffective in the stomach (mixture of chymes). The most important part of the digestive process takes place in the intestinal canal. Here we have the pancreatic juices with three ferments, the trypsin, which digests albuminous substances; amylopsin, which modifies carbohydrates; and steapsin, which attacks fat. The intestinal glands likewise secrete digestive juices which are also active in the digestion of the three food principles.

One important fact must be mentioned here, viz., that the organism does not contain ferments in a state of activity, and that it requires another body to bring it to the stage of activity. So we know that the stomach contains pepsinogen, which requires hydrochloric acid to be changed into the active pepsin. So the bile contains substances which render the pancreatic ferments active. In other words, in order to produce perfect digestion we must have a thorough harmony and co-operation of the different organs. To show the fact *i. e.*, the interdependence of the organs composing the digestive canal, a Russian physiologist, Pawlow, has introduced methods which permit us to observe the digestive processes of animals under perfect physiological conditions. He has shown in this manner for instance that the salivary glands adapt their function with great exactness to the kind of food that is taken. When he gave to the animal a certain quantity of fresh meat the salivary glands secreted but little. Meat does not require saliva for its digestion, and as it contained enough water the function of the saliva could be dispensed with. When he gave the same quantity of meat in a dried condition a very much greater flow of saliva was produced.

I cannot resist the temptation of mentioning some other experiments made in the same direction, although this leads me rather deeply into the subject. He gave meat to a dog and simultaneously struck a note on a musical instrument. He struck other notes without giving the animal any food. After this was kept up a certain time, the mere striking of the note which the animal had been accustomed to hear while it was being fed was sufficient to produce an immediate flow of gastric juice. The following is another experiment: An animal received an acid that is colored black. The moment this acid comes in contact with the mucous membrane of the mouth a large quantity of mucus flows into the buccal cavity. The dog protects itself from corrosion and poisoning by producing saliva which dilutes and removes the acid. If you give to the same animal at a later time black colored water without any acid the same excessive production of the saliva takes place due simply to the recollection of the first experience with the black fluid. It is also proved that the gastric secretion depends upon psychic factors. If an animal is fed through the mouth we often obtain a liberal supply of gastric juice, but if we introduce the same quantity and kind of food through a gastric fistula without showing it to the animal the secretion is markedly lessened. Excitement suspends the gastric secretion at once. If the digestion of a dog is at its height and the gastric juice flows freely, the mere sight of a cat has the effect of making the gastric secretion cease at once. In the same manner the pancreatic function is influenced by food and psychic stimuli. If a dog with a pancreatic fistula only sees meat the pancreatic and intestinal juices commence to flow at once.

From these few illustrations you will appreciate the complicated character of the digestive process and you will also understand why a disturbance in one part of the digestive apparatus is bound to interfere with the normal function of other parts.

One word about the manner in which the stomach empties itself. You must not believe that the food enters the intestines

*Lecture delivered before the Nurses of the Jewish Hospital.

from the stomach uninterruptedly. The gastric contents which are normally acid are emptied into the duodenum in small quantities. The pylorus is closed and does not become open until this acid of the gastric juice is neutralized by the alkaline intestinal pancreatic secretion and bile.

The digestibility of food depends not only upon the effectiveness of the digestive juices but upon how long the food remains in the stomach before it enters the intestines. As a rule we find liquid food easier digested. It leaves the stomach sooner than solid food, and the individual capacity varies to such an extent that some persons without any definite disease of the digestive organs will be rendered ill by articles of food which are well borne by others. Time of day and general condition are also factors. Animal food will usually be better digested than vegetables, because it is, so to speak, ready for digestion, while vegetables have their food substance encased in cellulose which has to be digested first.

In conclusion, I desire to repeat that it is the purpose of digestion to render the substances which we introduce soluble and diffusible. In addition to that it reduces the compounds which serve as food to elementary substances which can be used by the organism for building up its own tissue.

HOME SANITATION.*

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Home sanitation is the practical application in the home of knowledge and science to the preservation and promotion of health and the prevention of disease. Inasmuch as the better part of the lives of most of us is spent in the home, the subject is of especial importance, but of so wide a scope as to necessitate treatment in but a fragmentary way in a single address.

We are indebted to modern science for our present advanced ideas of sanitation. It has taught us, among other things, that most diseases are "germ diseases," and disease germs thrive in filth. If, therefore, we would preserve and promote health, we must maintain the home and its surroundings in a state of perfect cleanliness. In short, sanitation is cleanliness.

Air.—In considering a few of the essentials relative to home sanitation, we will take up first the subject of air. Air is absolutely necessary to life from moment to moment. One can be deprived of food or sleep for days, but the limit of life of man without breath is only about four minutes. Clean or fresh air is essential to health. Outdoor air is fresh and invariably cleaner than indoor air. The former is exposed to the cleansing influences of the sun, wind and of plant life, and whatever impurities it contains are more diffused than in the case of the air indoors, which is continually having its life-sustaining properties taken away by the process of breathing. In addition the waste products from the lungs and skin, and poisonous gases from lighting and heating, as well as germs mingled with dust, are discharged into indoor air, so that it needs to be continually renewed. Ventilation is the means by which this is accomplished. Some changes take place in the purity of the air of the home through the fireplaces, and when doors are opened for ingress or egress, but this is not sufficient. Some windows should be opened at intervals, even in winter. On the side of economy alone, this is important, for it is well known that a house with cold fresh air in it will "warm up" quicker than one filled with stale air.

In airing the house or living room in cold weather, it is best to throw the windows wide open now and then for a short time, instead of leaving them continually open a little. A room into which there is a constant influx of cold air cannot be kept at a proper temperature for comfort and a draught may be caused to the discomfort of the inhabitants of the house.

For the most part we keep our houses too warm in winter. Living in a room at 70° or over, one becomes easily sensitive to cold air and is likely to "take cold" on going out of doors. One should accustom one's self to a temperature of from 65° to 68° F.

The ventilation of the rooms in which we spend our waking hours is more difficult than the ventilation of our sleeping rooms, for a living room is common to the whole family and not all members are agreeable to the same temperature. It is easier to regulate the air supply of the sleeping apartment. There was a time when some people believed night air to be unhealthy, but this superstition has largely been done away with, as is evidenced by the increasingly popular and beneficial practice of sleeping out-of-doors. This is especially to be commended, but unfortunately it is difficult of accomplishment in a large city like New York.

Night air is deprived of the purifying influences of the sun, but it contains fewer poisonous gases arising from putrefaction, which is less active at night than in the day; it contains, however, less carbonic acid gas, in cities at least, since there are fewer fires burning, and there is less dust on account of lessened traffic.

It is altogther desirable then to so ventilate the sleeping room as to make the air in it practically the same as the air out of doors, using sufficient cover in cold weather, and such as will insure against exposing any part of the body except the head, and even this may be partly covered, if the need is felt. Fresh air sleeping is a splendid appetizer.

Light.—As life is dependent upon air so is it dependent upon light—light is life. Every living thing loves light. Watch the animal bathe in the sunlight. He does not do it because he desires warmth only, for the cat will forsake the stove for sunlight, but instinct teaches him that sunlight benefits him.

There is no better disinfectant than sunlight. Most pathogenic bacilli when exposed to the rays of the sun are soon destroyed. It is essential then that as much light as possible be admitted to the home.

Water.—Next in importance to fresh air and sunshine in home sanitation is pure water, especially for drinking purposes and the preparation for the table of uncooked vegetables, which cannot be too thoroughly cleansed. Boiled water is safe to use, but aside from the labor in its preparation it is not as wholesome to drink as water in its natural state. The bottled waters may be pure, but they are too expensive for use in many families. The only other alternative is the filter. This should be of a standard make, not one to be attached to the faucet, which is small and quickly becomes clogged, rendering the water less pure than it otherwise would be, but one of generous size, that has been subjected to the severest tests as to its efficiency and safety. To cool drinking water, it should be placed in corked bottles in the refrigerator. So-called "iced water" is exceedingly liable to contain germs, for natural ice is often impure, being taken from polluted rivers and lakes.

Plumbing.—The subject of water naturally leads to the subject of plumbing. In the modern house, if properly built, the question of plumbing need give us but little concern, but in the older dwellings, having lead pipes and enclosed apparatus oftentimes with improper traps and insufficient vents, too much care and attention cannot be given to avoid the contamination of the water supply or the escape of sewer air into the house. The drain pipes should be watched for possible leaks in the cellar or out of the way places. A small leak in the cellar from one of these pipes will pollute the air throughout the entire house and such pollution leads to a decline in the health of the inmates of the house, or to the contraction of such diseases as typhoid, dysentery and malaria. If there is the slightest suspicion of sewer air, have the usual tests made, and if anything wrong is found remedy it.

Enclosed apparatus underneath sinks, lavatories and around bath tubs and toilets, with their network of pipes, are lurking

*Delivered under the direction of the "Public Health Education Committee" of the American Medical Association in affiliation with the Medical Society of the County of Kings, March 29, 1912.

places for disease germs. Such places are, as a rule, inaccessible and are shut off from sunlight and air. The closets underneath sinks are frequently used for the storage of cloths, etc., which in themselves may not be clean. All such encumbrances should be removed and the closets, if allowed to exist, should be thoroughly and frequently cleansed and aired. Of course, in most cases, the substitution of new plumbing for old is out of the question, but where possible the toilet, at least, should be made open, for above everything else this fixture should be such as to allow thorough daily cleansing.

Floors.—In old houses there is the problem of the floors, which are, as a rule, laid with wide boards, generally uneven, decayed and full of cracks, the latter containing the filthy accumulation of years. It is not sanitary to cover such floors with carpets, for the filth is still there, though unseen. Such floors, whether they are to be carpeted or left bare, should be given a thorough renovation. First wash the floors thoroughly and clean out all the cracks, then fill the open spaces with cement and two or three coats of floor paint. Floors treated in this way can be readily kept clean with soap and water.

Side Walls.—From the consideration of floors we naturally turn to the decoration of side walls and ceilings. These should be, for the most part, light in color to give cheerfulness to the rooms and to avoid the necessity for an excess of artificial light, and at the same time of a substance which can be kept clean with soap and water. Paper of any color soon becomes soiled and kalsomine is even more delicate than paper—neither of them will withstand proper cleaning. Washable paint is the most durable of all substances for this purpose and it can be made any tint desired, from the cream or yellow, which is quite suitable for the living room, to the soft pink, blue or green for the bedrooms. Green is perhaps the most restful of all for a room where repose is sought. Paint may even be put over paper with good results, and in the case of cracked and uneven walls it is often necessary to use paper first, in order to cover up the irregularities that paint alone would not hide.

If wall paper is to be used, let it be only after all the old paper has been removed and the walls and ceilings thoroughly washed down and sized. The color, at least for the bedrooms, should be soft and without intricate pattern, for some days it may have to be gazed upon for hours at a time, by some one too weak and ill to protest.

Kitchen.—One of the most important rooms in the house is the kitchen. The late Mark Twain said that the kitchen ought to be in the front of the house so as to save the servants time and trouble in running to the windows to watch the sights in the streets. The suggestion might be an economical one, but it could hardly be adopted in the city home. A location, however, affording daylight and ample ventilation is essential. It should be kept spotlessly clean. There ought not to be any covering on the floor, even linoleum, and the cooking table should be a plain board one without covering. The sink should be kept free from all refuse and it should be thoroughly cleansed after using. The kitchen utensils should always be put away clean and dry. No vessel, pan or spoon should be allowed to become scorched or burned, for when in that condition they cannot be properly cleaned. The handles of all kitchen tools and utensils should be frequently washed as well as the utensils themselves. Stray crumbs or soiled dishes should not be left exposed over night, for they attract mice, cockroaches, ants, and other germ carrying pests that may infect food.

The windows and doors of the kitchen should be screened in summer against flies and other insects, for food may become infected with disease germs by contact with them also. Ficker says, in his Archives of Hygiene, "Typhoid bacilli have been been obtained from the bodies of flies from a house where typhoid fever had occurred. Experiment showed that flies fed with these germs are able to convey them to other objects for as long as twenty-three days afterwards. The bacilli have also been found on the heads, legs and wings of flies five days after and in their intestines nine days after such feeding." I may say in passing that too great care cannot be taken to avoid the contamination of food by insects and vermin.

Cellar:—In city houses, as contrasted with country or farm houses, the cellar, being less needed for the preservation of fruits and vegetables, is perhaps more often neglected than any other part of the house, because it is seldom seen by any one except the "family," which means the cook and the one who attends to the furnace. It is allowed often to become encumbered with all sorts of rubbish. A clean, light, dry, well aired cellar is a most important thing for the welfare of the occupants of any dwelling, for aside from its utility as a storehouse away from frost, the air of the cellar at times pervades the whole house. The cellar should, therefore, be kept well ventilated. The floor should be of concrete with a proper slope toward the drain pipe. The walls and ceilings should be cleansed and whitewashed at least once a year. Care should be taken to avoid the raising of dust in the cellar. Ashes should never be screened in it. In clear weather, the cellar should be thoroughly aired and if possible sunlight let in.

Garbage:—The disposal of waste is a subject with which sanitation is deeply concerned. In cities the wastes not taken care of by the sewers are chiefly garbage and ashes. The latter, if kept covered, is for the most part, harmless, but the former, by throwing off poisonous gases from decomposition and being a prey at times to cats, dogs, rats, mice, flies and other vermin, is exceedingly harmful to health.

There should be a place for the garbage can away from the kitchen or back door. Preferably it ought to have a little room by itself in the back yard, with concrete floor, which can more readily be kept clean. The garbage can itself should be frequently emptied and thoroughly washed and the cover of the can should never be left off. An excellent, though unfortunately difficult method of disposing of garbage is by burning. I have heard of an excellent housekeeper, whose family has been small, who for twenty years past has disposed of all her garbage by burning it in the range. She first dries it out thoroughly over the ovens and then burns it in the firebox with the coal.

Refrigerator:—I have said nothing upon the subject of food, as this properly belongs under the head of hygiene, a subject one might address one's self to at great length; but the place for preserving food should be mentioned here. The refrigerator should be kept in a cool room away from the kitchen and laundry, for one thing to avoid the waste of ice, but more especially to avoid the absorption of odors, as for example, milk, butter and eggs. The refrigerator should not, as is often the case in apartments, be connected with the sewer, but should be provided with a proper drip pan and this should be emptied regularly, and frequently cleaned with soap and water. Once a week, at least, the refrigerator should be thoroughly cleansed inside and out, including the handles of the doors. Food of any kind, while warm, should never be placed in the refrigerator, for the condensation of moisture arising from it fosters the growth of the germs of putrefaction, so that such food not only will not keep well, but will become actually harmful if eaten.

Door Knobs:—This leads me to speak of something very often neglected—the door knobs. All door knobs should be frequently cleansed. They are in constant use, handled by members of the household and servants, with hands not always clean, and they certainly need washing quite as much as many other things about which we think we need to be very particular, as for instance, our dishes.

Dish washing:—Dish washing is one of the lost arts, known and practiced by our mothers and grandmothers, perhaps, but to-day lost or unknown to the average housekeeper. And so at the risk of telling you something on this subject which some

of you may already know and practice, I am going to lay down a rule or system to go by; for dishwashing, as everything else, can be properly done only by system. First: the dishes should be thoroughly scraped of all refuse and piled in order, plates of same size together. The silver should also be arranged—forks of one size together and the same with the spoons and knives. Then have ample hot water, cloth and soap. Wash glasses and silver first and afterward the least soiled dishes and plates down to the greasy pots and pans. Avoid having many dishes in the pan at one time. After washing, rinse the dishes in more hot water and then dry them with clean towels. When the process is completed, wash out the dishpan, dish cloth and drying towels and place the latter preferably in the sun to dry.

Dust:—Under the topic of air I might have included the subject of dust, but because of its importance it seemed best to mention it by itself. Almost all the air we breathe contains dust. Sometimes it may be harmless, but more often it contains germs and frequently harmful ones. But nature has provided us with a marvelous filter—the nose—so that very little of the dust contained in the air ever reaches the throat or the lungs. In fact, it has been shown by experiment that air taken from the back of the nose after its passage through this filter is practically free from bacteria. Hence it is that we generally escape disease this way. If, however, we are continually breathing germ laden dust this filter becomes clogged, the nose, throat, and lungs become irritated and diseased and the bacilli find their way into the system.

It is important then, first, to always breathe through the nose and, second, to breathe air containing as little dust as possible. The raising of excessive dust by sweeping and dusting should be avoided.

The vacuum cleaner eliminates dust and I believe the time will come when one of standard make at reasonable cost will be found in every household.

The feather duster and dry cloth should be abandoned, and the dustless cloth, or the dampened one, should be used instead.

Finally if one were asked to lay down a rule as to sanitation let it be this: to make cleanness in everything so fixed a habit that it be not thought of as sanitation.

If this rule be applied to the home, it will help to make it not only a place of beauty and comfort, which it ought to be, but also one of happiness and health.

Blenorrhagic Vaginitis.

Doleris advises injections of permanganate of potassium and suggests that in the intervals between the douches a tampon be kept in place covered with one of the following:

(A) Bismuth Subgallate
Iodoform
.....aa 5 grammes.
Vaseline ..... 20 grammes.

(B) Benzoin
Camphor
Cubebs
.....aa 5 grammes.
Vaseline... ..... 25 grammes.

The first is somewhat more irritating than the second. B. may be replaced by A if it causes too much pain.

In children and young adults, the catarrhal or pre-eruptive stage of measles may be mistaken for influenza. The history of exposure in the non-immune, the presence of Koplik's spots and the rash appearing on the fourth day settle the question.

In order to demonstrate a thin layer of fluid beneath the abdominal wall, the pleximeter finger must be held rigidly in contact with but not supported by the abdominal wall, and the percussion blow must be very light.

KILLING FLIES AND MOSQUITOS.

The fly and the mosquito, twin pests, must go. They are being hunted to their lairs by hosts of relentless enemies, and it is only a question of time when they will be practically eradicated.

The latest method of mosquito extermination is by means of minnows of gold fish. The Illinois Central Railroad is stocking stagnant pools along its lines, at the suggestion of Dr. Guy G. Dowdall, the railroad's chief surgeon. He thus explains his theory:

"All minnows eat the larvæ of the mosquito, but no minnow except that of the goldfish is able to survive in stagnant water. We believe that by stocking all of the pools on our lines with the hardy minnows we shall be able in a short time to do away entirely with the malaria and other disease-carrying mosquitoes."

The Illinois Central has written to the various State hatcheries along its lines and to the Federal hatcheries, asking cooperation. If the aid is not given, the road will establish its own hatcheries and stock the pools itself.

The idea of larvae-destroying fish is not new. In 1905 President David Starr Jordan, of Leland Stanford, Jr., University, suggested the employment of three families of fish, Gambusia affinis, Fundulus grandis and Mollienesia latipinna, found in Texas, and 400 were sent to Hawaii, where they have done yeoman service in preventing the breeding of mosquitoes.

Draining, filling, the use of coal oil and larvicides and the covering or screening of cesspools and water barrels are the favorite means of destroying the larvæ. It should also be remembered that mosquitoes can breed in roof gutters, tree holes, hollows in the ground, fire buckets, pails and cans, on the dumps and even in flower vases. These breeding places should be removed. In the use of oil one ounce of kerosene to 15 square feet of surface is recommended.

The fly should not be forgotten, for it is a most dangerous transmitter of disease. The "swatting of the fly" is receiving so much encouragement from the press of late that many flies are destroyed in this manner.

Prof. R. I. Smith, the entomologist, recommends formalin poison. The *Bulletin* of the New York State Board of Health gives the Smith formula as one ounce of formalin and sixteen ounces of equal parts milk and water. This mixture should be exposed in shallow dishes with a piece of bread in the center as a feeding place wherever flies are found. This mixture is death to flies and not as dangerous to human life as many of the fly poisons in general use.

A writer in *Good Health* emphasizes the necessity of killing flies and incidentally endorses the Smith plan, in these words:

"To clear rooms of flies, carbolic acid may be used as follows: Heat a shovel or any similar article and drop thereon twenty drops of carbolic acid. The vapor kills the flies.

"Sticky fly paper, traps, and liquid poisons are among the things to use in killing flies, but the latest, cheapest and best is a solution of formalin or formaldehyde in water. A spoonful of this liquid put into a quarter of a pint of water and exposed in the room will be enough to kill all the flies."

Many people fail to appreciate the deadly menace of the fly. They cannot believe that over 100,000 typhoid bacilli have been found on *one* fly and that in an examination of 414 flies, captured at random, it was discovered that they showed an average of 1,250,000 bacteria per fly.

Flies are creatures of filth. They are born in it and live in and on it. Beside being troublesome, noisy nuisances, they are disease carriers and swarm with the bacilli of disease. They travel from feces to fruit, to decaying matter, to milk and to food and deposit their death-dealing burden.

Physicians have a solemn duty to perform in insisting that their patients realize to the fullest extent what the house fly stands for and what a terrible menace it is to every community.

It is extremely desirable to conduct a systematic and cleanly dissection when seeking a foreign body.—(*Am. Jour. Surg.*)